The Oil and Gas Journal

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Copyright, 1939, by The Petroleum Publishing Company

How you can lengthen wire rope life

BY PROPER SHEAVE MAINTENANCE

No. 3 in a series of informative articles for wire rope users, prepared by the MACWHYTE *(Wire Rope) Company.*

What to Watch For:

Keep a sharp look-out for these two wire rope enemies

(a) corrugated sheaves,
(b) pinching sheave grooves.

To get the most for your wire rope dollar, make sure that sheaves and wire rope work together in harmony. Grooves must be smooth and must also be slightly larger than the diameter of the rope to prevent pinching and excessive wear.

Contrary to popular opinion a sheave groove usually wears smaller, not larger.

Naturally, therefore, the deeper a sheave is worn the more it pinches the rope. Friction is increased, and the rope is forced to do more than its normal share of work. Pinching shortens the rope's service life.

Corrugations. In a sheave groove, corrugations are caused by the wire rope, yet the rope will not continue to engage these corrugations (as, for example, a chain engages a sprocket). A slight twist of the rope, or a very small change of lay will prevent wire rope from tracking in the corrugation. Corrugations in a sheave are an indication either that the sheave is too small or that the material in the sheave is too soft.

How You can Save Wire Rope Dollars.

1. *Periodically inspect your sheaves and recondition them.* Make sure the sheave runs true and does not wobble on its bearing; keep the groove free from roughness or burrs of any kind; make sure the groove is *larger* than the wire rope.

2. *When buying new sheaves . . .* see that they are made of material that will stand up under the rope pressures encountered* — and make sure that the grooves are of proper size for the rope.

3. *REMEMBER,* the longer you delay reconditioning your sheaves, the more you reduce the life of your rope. The best wire rope in the world loses every time in a battle with corrugated and pinching sheaves.

Above. *A "stuck" roller. Note how the rope has cut into the roller; in a short time, this "sawing" action will ruin the rope. Proper installation and maintenance would have saved many dollars here.*

At Right. *This deeply scored sheave will take a heavy toll in rope life from the best of ropes.*

Handy Reference Table on Groove Diameter Tolerances

The following table gives the tolerances recommended for groove diameter for various sizes of rope. The tolerances shown are for diameter of groove and are added to nominal diameter of rope.

Nominal Diameter of Rope	Min. Clearance before sheave replacement or re-machining of grooves	Clearance for new or re-machined grooves	
		Minimum	Maximum
1/4" and 5/16"	1/64"	1/32"	3/32"
3/8" to 3/4"	1/32"	3/64"	1/16"
7/8" to 1 1/8"	3/64"	1/16"	1/8"
1 1/4" to 1 1/2"	1/16"	5/64"	1 1/64"
1 5/8" to 2"	3/32"	7/64"	13/64"
2 1/8" to 2 1/4"	3/32"	7/64"	15/64"

*More complete information on "Sheaves and Drums" are given in the MACWHYTE General Wire Rope Catalog G-13 together with other useful information — your copy furnished on request.

REPRINTS AVAILABLE *of this and other informative articles on wire rope. Simply address: Macwhyte Co., Dept. OG-10, Kenosha, Wis.*

MACWHYTE COMPANY. Home Offices, Kenosha, Wisconsin. Manufacturers of PREformed, Internally Lubricated, Laboratory Tested and Field Proved Wire Ropes and Braided Wire Rope Slings, for every use . . . New York . . . Pittsburgh . . . Chicago . . . Ft. Worth . . . Portland . . . Seattle . . . San Francisco. (Distributors throughout the U. S. A.)

Trends

Low-Gravity Crude Advance Reflecting Strong Fuel Market

ADVANCES in prices paid for lower-gravity crudes in Texas the first of the week reflected the stronger position of practically all grades of fuel oil, prices for which started to advance in midsummer at many refining centers. The higher quotations were a development of enlarged industrial and marine demands for the low-gravity fuels and the expectation that among the lighter distillates the diesel and furnace-oil consumption will exceed all previous records this fall and winter. It is also believed that the increased war demand, once it is under way, will center in the fuel oils required by the navies of the Allies.

CRUDE PRODUCTION *3,647,404 bbl. daily average—down 29,028 bbl. One year ago 3,237,960 bbl.*

CRUDE STOCKS *232,811,000 bbl. as of September 23—down 205,000 bbl. One year ago 280,278,000 bbl.*

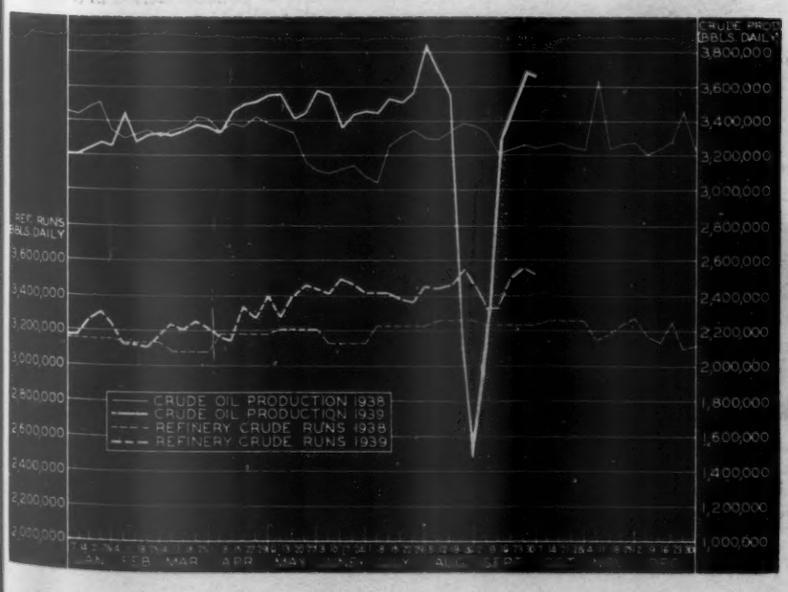
GASOLINE STOCKS *71,168,000 bbl. as of September 30—up 148,000 bbl. One year ago 69,068,000 bbl.*

GAS AND FUEL OIL STOCKS *141,130,000 bbl. as of September 30—up 161,000 bbl. One year ago 151,226,000 bbl.*

REFINERY RUNS *3,560,000 bbl. daily week ending September 30—down 10,000 bbl. One year ago 3,233,000 bbl.*

Domestic market trends, so far as demand is concerned, continue favorable. While there has been a seasonal decline in gasoline demand, reports show that consumption is running from 4 to 6 per cent above the corresponding period of last year. With indications that the sale of new model (1940) cars will run ahead of 1938 through the rest of this year, the outlook for continued heavy consumption of gasoline is favorable.

Any confusion in refinery markets centers in the export situation. Delays in water shipments are not clearing up as rapidly as many had expected. Insurance rates have greatly increased, not only on shipments to France and Great Britain, but many neutral countries. Uncertainty regarding the neutrality legislation that will be passed by Congress is also said to be a factor in the shipping situation. These developments have brought an easier gasoline market at the Gulf Coast for October shipments. Market observers generally are bullish regarding the coastal refinery markets as soon as normal shipments are resumed.


CRUDE PROD. BBLS. DAILY
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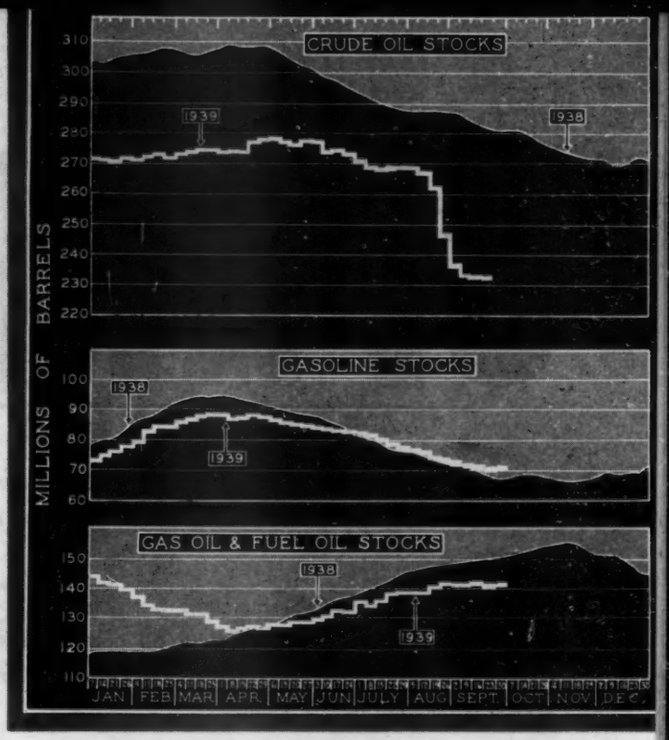


With this temporary curtailment of export shipments and the steadily increasing production of Illinois in mind, many contended that the increase in October allowables which were made effective by several states were not justified. The daily increases over September in four states are: Oklahoma, 39,250 bbl.; Kansas, 22,895 bbl.; New Mexico, 14,200 bbl.; Louisiana, 22,929 bbl.; total 99,281 bbl. With the shutdowns scheduled for 11 days in Texas during October, the average daily allowable in that state will be slightly less than it was last month. Past experience indicates that this Texas allowable probably will be increased later in the month.

Lubricating oils and wax are the strongest products of the refinery lists, partly accounted for by increased export demands for delivery over the remainder of the year. Gasoline was somewhat softer the first of the week in the Mid-Continent and Middle West.

DAILY AVERAGE PRODUCTION FOR WEEK

	Sept. 30, 1939	Bur. Mines Sept. est. of demand	Sept. state allowables	Sept. 23 1939
Oklahoma City	75,725			88,050
Seminole fields	37,650			37,325
Remainder of state	274,150			272,125
Total Oklahoma	387,525	429,300	384,950	397,500
East Texas	491,798			492,898
West Texas	247,846			260,148
North Central Texas	116,700			118,550
Texas Panhandle	68,347			66,796
East Central Texas	92,799			92,000
Gulf Coast Texas	368,000			366,350
Southwest Texas	99,600			98,650
Total Texas	1,485,090	1,408,300	1,375,000	1,495,392
North Louisiana	66,175			65,410
Gulf Coast Louisiana	180,900			183,150
Total Louisiana	247,075	255,700	235,475	248,560
California	610,750	596,000	598,300	621,300
Kansas	157,225	166,300	147,705	160,500
Arkansas	65,870	50,700		65,135
Eastern fields	98,500	101,300		99,800
Illinois	344,267	248,760		340,116
Michigan	68,362	55,000		67,249
New Mexico	99,850	108,700	97,000	99,840
Rocky Mountain area	82,890	90,700		80,990
Total United States	3,647,404	3,510,700		3,676,432

SPARKS . . . FROM THE NEWS

LOCO HILLS ACTIVE: The Loco Hills area in New Mexico has attracted producers until the field has become the most active in the state.

CAUSES: Delayed water shipments into the war zones and higher insurance rates to practically all points are factors in petroleum export markets which in August were absorbing 15 per cent of the supply in this country.

AVIATION FUEL: Fix the word "neohexane" firmly in your vocabulary. It's the newest ingredient for raising the octane value of gasoline, and shortly will be manufactured commercially. It's said to improve aviation fuel as much as 50 per cent in power.

HOPE: With Illinois' new drilling operations increasing to 120 last week—a new high—supporters of orderly development continue hopeful that a conservation act will be incorporated in the governor's call for a special session of the legislature within a few days.

FAR DISTANCE: A Madill, Okla., man reports he drove 135,000 miles in 16 months while assembling a big block of acreage for a major company in southern Oklahoma. Much of the land is in an area that will be inundated if the federal Government builds a proposed dam across the nearby Red River.

TRAPP GROWTH: The Trapp field, currently the biggest producing area in Kansas, reached out the past week and took in the mile-distant Coralena pool when an intermediate well came in a producer.

TRY AGAIN: First-year leases are expiring in the Forest City basin, where some gas but no oil has as yet been found, and oil companies are reported paying rentals and renewing many leases.

RECONDITIONING: Budapest reports the Poles did such a thorough job in the Galician oil fields that it will be at least a year before the Russians or Germans can restore production.

QUESTION: Investigators have found that Donald Duck, Kayak, and Seabiscuit signed referendum petitions against Atkinson oil control bill in California. The question has arisen as to whether they are not representative of a small but powerful fringe of the state's voters.

BUREAUCRACY: Dire predictions that management of the natural-gas business will be usurped shortly by governmental agencies were made at the West Virginia Oil and Natural Gas Association meeting last week. This forecast was based on a study of the federal Gas Act.

RETAIL PRICES: The public might be interested to learn a fact that has been pointed out to the T.N.E.C. members. That is, that price reductions in gasoline have been much more frequent and sustained than price advances. Incidentally committee members appear to be much more interested in prices than anything else.

CONVENTION TIME: The next 2 months will be busy ones for the conventioneer. More than a score of important oil gatherings stud the calendar for October and November.

BEST IN 5 YEARS: Mid-Continent lubricating oil prices are at the highest points touched in 5 years. Bright stocks have recorded an advance of 26 per cent in the past month.

BEGINNING TO WALK: Mississippi's infant petroleum industry entered a new phase last week when it made its first shipment of native oil—4 tank cars, loaded with 8,000 bbl. of crude from the discovery well in the Tinsley field.

BLOWOUT AT 3,400 FT. IN TEXAS FIELD . . .

Magnolia's No. 1 Ellen Johnson, in the Clara Driscoll field, Texas, blew out from total depth of 3,400 ft. while coming out of the hole. Sixteen hundred feet of 3½-in. drill stem was blown out, as seen in the foreground. The boilers, draw works, mud pumps and engine were dragged away and saved shortly after this picture was taken

Oil Problems Argued Before Committee

By HENRY D. RALPH

WASHINGTON, D. C., Oct. 3.—The competitive position of large and small units in the oil industry, factors which make prices for crude oil and refined products, and the operation of conservation and proration laws were the chief subjects interesting the Temporary National Economic Committee during the first half of its hearings on the oil industry.

The hearings will continue the remainder of this week and probably into the following week, and the later sessions are expected to deal more with gasoline retailing and the problems of independent jobbers and retailers.

While dozens of subjects were touched on by witnesses who have appeared so far, and volumes of charts, statistical tables, and reference material have been placed in the record, the questions of committee members and staff counsel have dealt with price factors and the impact of competition between majors and independents. The operation of proration laws was discussed by several witnesses, both laudatory and critical, and the committee received a technical education on such matters as allowables, well spacing, chokes, and bottom-hole pressure.

Committee's Attitude Impartial

On the whole, the attitude of the committee appears to be fair and impartial, with a desire to treat all witnesses equally and to obtain definite facts rather than loose charges and opinions. Spokesmen for major companies were interspersed with witnesses representing independents; and while most of these were subjected to severe cross-examination, they were treated impartially and without apparent bias as to the type of information desired. The T.N.E.C. appears to be trying sincerely to get at the bottom of the many and long-standing complaints which have been raised against various practices in the oil industry.

In spite of concentration on a few subjects, a large number of topics crept into the record through the statements of various witnesses, most of which received careful, if passing, interest from the committee. These subjects ranged from national defense to the August shutdowns and from hot-oil running to tanker rates. Other subjects touched on included the Mexican oil confiscation, the Cole bill, accuracy of price quotations of trade journals, flush Illinois productions, sources of capital for independent operators, antitrust-enforcement policy, and the monthly demand forecast by the Bureau of Mines.

Most of the members of the T.N.E.C. were present during the greater part of the hearings, while several of the departmental members were at all times represented by alternates in the person of staff members especially assigned to these hearings. The Department of Commerce, Federal Trade Commission, and Securities and Exchange Commission each had one or two staff members continuously present, while the Department of Justice was represented not only by Asst. Atty. Gen. Thurman Arnold, but also by a panel of three attorneys who had studied the advance statements of the witnesses and who conducted the bulk of the cross-examination. These were Hugh M. Cox, W. B. Watson Snyder, and Fred E. Berquist.

All members of the committee took an active part in questioning, but the most active has been Leon Henderson, a member of the Securities and Exchange Commission and special adviser to the T.N.E.C. He showed that he had read the prepared statements of most of the witnesses and was particularly interested in all testimony relating to factors influencing prices.

Several members of Congress were also interested spectators, particularly Rep. Wesley Disney, of Oklahoma, who was asked to sit at the committee table because of his knowledge of the oil industry, and Representatives William P. Cole, of Maryland, and Carl E. Mapes, of Michigan, both members of the subcommittee of the House which will soon start hearings on the Cole bill for federal regulation of conservation. This Cole bill, incidentally, was referred to by a number of witnesses, but not endorsed by any of them.

Proration Laws Defended

State proration laws were defended as true conservation and attacked as tools of the majors for squeezing independents, and the committee evidenced the greatest interest in getting at the facts behind these conflicting opinions. From Dr. Joseph E. Pogue, vice president of the Chase National Bank of New York, the committee received a technical discussion of the theory and operation of proration and an expert appraisal that, through an evolutionary process, it has come to work well and will work better in the future. From E. De Golyer, an engineer and operator, the committee received a defense of proration as it is actually applied. But the committee also heard proration as practiced unconditionally damned by such witnesses as Marion M. Travis, president of M. M. Travis, Inc., an independent refiner; John B. Dailey, a small oil-land owner from Houston, Tex., and from Karl E. Crowley, Fort Worth attorney for independent refiners and producers.

Pipe lines were discussed by practically every witness, and it would appear from the interest

HIGHLIGHTS FROM TESTIMONY PRESENTED TO DATE

Chairman O'Mahoney showed unusual interest in a suggestion by John E. Shatford for establishment of federal standards with which proration and conservation laws would have to comply. Federal incorporation of corporations, the senator thought, might be required for those doing business on a national basis.

John E. Shatford, Arkansas refiner: Charged subversive use of legislative and administrative powers in crude-production control and discriminatory pipe-line and rail rates. Did not favor pipe-line divorcement.

E. De Golyer, independent producer: "We realize more and more that basing allowables upon potentials is not a true conservation solution, and that more weight must be given to other factors, notably reserves."

Karl A. Crowley, Fort Worth, Tex.: "The oil industry is now resorting to fake conservation under proration laws and control of pipe-line rates. I am opposed to federal control."

Louis J. Walsh, vice president, Eastern States Petroleum Co.: "Proration should be entirely on a basis of engineering principles, and not on a basis in which supply is adjusted to demand."

H. B. Fell and Russell B. Brown, Independent Petroleum Association: "Through the police power of the states, production can be controlled now, but this power is somewhat nullified because it does not extend to refining and marketing."

John B. Dailey, landowner, Houston, Tex.: "A fundamental issue is whether a landowner can operate as an individual in the center of a great oil field."

M. M. Travis, Houston: Asserted the major companies have evolved a formula that definitely limits the growth and very existence, not only of the independent refiner, but of the independent producer.

J. Howard Pew, president, Sun Oil Co.: "The petroleum industry is necessarily an integrated one, whether through common ownership of all the activities, or because of contractual relations between the several divisions of the industry."

John D. Gill, Atlantic Refining Co.: "If the American public had paid 1926 prices for the petroleum products it consumed in the next 12 years, it would have paid 14 billion dollars more than it actually did pay."

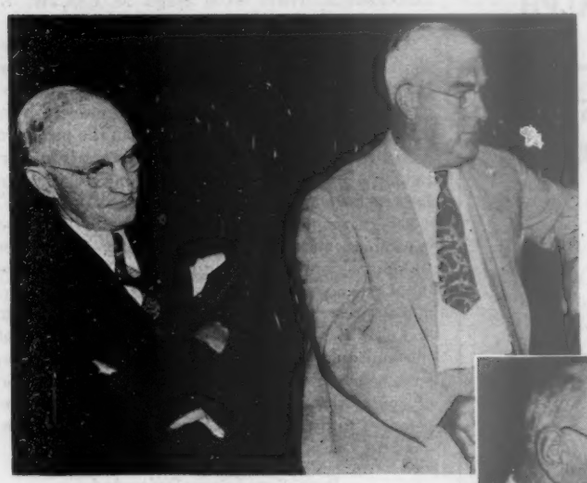
Joseph E. Pogue, Chase National Bank: "The situation represented price distortion within the internal structure of the industry, and not a transfer of unnatural prices to the consuming public."

Dr. John B. Ise, University of Kansas: "Marketing of products is apparently carried on at a heavy loss, which for independent marketers is a serious matter, but the high earnings of integrated companies in other operations make up for their losses in marketing."

which the committee is taking in this subject it may be contemplating recommending some sort of legislation, either to divorce pipe-line ownership from integrated companies, or to place pipe lines under a more rigorous federal regulation than that now exercised by the Interstate Commerce Commission. Pipe-line ownership by majors was defended as necessary plant facilities and condemned as a monopolistic instrument for squeezing independents. Much testimony was introduced as to pipe-line earnings, rates, control, and the extent to which they are or are not common carriers.

The way in which prices for crude and refined products are established is proving to be of special interest to the committee. Questions involved the extent to which other companies follow the lead of a major in raising or lowering prices and the ability of a price leader to alter the entire market; the manner in which posted prices are fixed; the frequency and extent of changes in posted prices, and the extent of selling above and below posted prices; whether conservation laws and the monthly forecast of the Bureau of Mines influence crude oil and prices; costs of various operations in the industry and whether prices are related to costs and whether or not various branches of the industry generally operate at a loss.

Right: A battery of cross examiners from the Department of Justice listen to the testimony of a witness at the T.N.E.C. hearing. The special assistants are Hugh M. Cox, W. B. Watson Snyder, and Fred E. Berquist



Harris & Ewing

Extreme left: W. H. Ferguson, vice president, Continental Oil Co., and Major James J. Cosgrove, general counsel for Continental, are interested spectators in the background during the hearing

Left: Industry and government representatives fraternize during a recess. W. S. Farish, president of the Standard Oil Co. (New Jersey); R. E. McConnell, business adviser to the Department of Commerce, and Leon Henderson, S.E.C. member and economic adviser to the committee

Major-Company Integration

The integration of major companies came in for much discussion, and the committee appeared particularly interested in the points of impact and competition between an integrated company and an independent, and in the question of whether an integrated company is of itself a monopoly. Integration was vigorously defended as the key to progress and efficiency by such witnesses as J. Howard Pew, president, Sun Oil Co., was denounced as monopolistic by several spokesmen for independents, and was suggested as the subject for control rather than outlawing by Russell B. Brown, counsel for the Independent Petroleum Association of America.

Mr. Pew, being the first witness who was a policy-making executive of a major oil company, naturally was subjected to a severe crossexamination which lasted for the better part of an entire day. Witnesses who followed were not questioned at such great length, but there was no discernible difference between the attitude of the committee towards spokesmen for majors and independents. In fact, more than once a committee member reminded a witness that the T.N.E.C. is seeking definite facts rather than beliefs and suspicions.

Federal Standards Suggested by John E. Shatford

REGULATION of pipe lines to make them operate as common carriers, rather than their divorcement from major companies, was recommended as the second week of hearings opened, by John E. Shatford, El Dorado, Ark., an independent refiner, leasehold and royalty owner, and operator of tank cars. He criticized the way in which the Interstate Commerce Commission has regulated pipe-line rates and practices, and also discussed railroad rates; and, like other independent spokesmen, criticized the proration laws, though professing support of true conservation.

The Monday hearing was cut short on account of the beginning of the neutrality debate in the Senate, and the chairman recessed the hearing so he could develop the points raised by Mr. Shatford before proceeding with other witnesses.

Mr. Shatford declared that railroad rates on gasoline have quite uniformly been reduced on short hauls, used chiefly by the major integrated companies, while charges on long hauls, used chiefly by the nonintegrated companies, have been increased. He advocated a return to the 1916 basis of railroad rates, and called for the enforcement of the Interstate Commerce Act to the point of making pipe lines true common carriers. The witness deviated from other independent opinion in saying that divorcement of pipe lines from their present ownership was not the remedy. Instead, he said that making them true common carriers, on a basis of regulation of rates and practices commensurate with that applied to the railroads, would take care of the excess earnings angle of the pipe-line problem. He declared restoration of the 1916 rail tariffs would enable independent southwestern refiners to compete with the majors upon an equal footing in the gasoline markets.

"Railroad rates on petroleum products, which are significant in the operations of the integrated companies, are currently being reduced so as to make the carriers an integral part of the distributive systems of these companies, whereas the rates paid by nonintegrated companies are advanced rather than cut," he declared, and summarized his views on pipe lines by saying: "There exists no genuine compliance with the intent and purpose of the Interstate Commerce Act."

It was the opinion of the witness that proration seems to rest upon a much less secure footing than conservation when it is viewed from the standpoint of the interests of people of each producing state. "Engineering practice, much of which is entirely experimental, is being used in all regulated production to such an extent as to create a relatively tight crude-oil market.

"These practices must be relaxed, or present investments, supplies and markets of nonintegrated companies will be sacrificed and future participation prevented. Slow producers cannot develop new properties in view of the very slow rate of liquidation which prevails at present under present low well allowables, and enforced unitization of operations. Small refiners cannot get adequate supplies of crude at profitable prices because the market is closed. They buy on a closed market and sell on a market which is permanently oversupplied," Mr. Shatford said.

Why Majors Support Proration

Opinion was expressed by the witness that there was no affirmative conspiracy or collusion among the integrated companies, but that the control of the time and the rate of production, as well as the rate of marketing, gives the majors price control. This underlies the majors' support of proration, he said. Mr. Shatford also said that, invariably, the proration laws and administrative policies of bodies administering these laws reflect the opinions of major companies.

Mr. Shatford concluded his testimony Tuesday noon after a round-table discussion with the committee which was high lighted by his recommendation for the repeal of the Connally Hot-Oil Act and the prescription of federal standards to protect the national interest.

Such standards, he said, would have to be complied with by the states having proration and conservation laws before resort could be had to the federal enforcement machinery as to transportation of hot oil. These standards would include provision for an adequate supply of crude oil, such as would insure the preservation of independent competition in the marketing of refined products. He said the states must relax their present administration of proration on the basis of strict engineering principles, which react to the benefit of the major companies, and insist upon the preservation of competition as a necessary element in the business.

Chairman O'Mahoney evinced great interest in this recommendation and asked the witness as to the extent to which national public interest was considered by the respective state boards. Replying negatively, Mr. Shatford said he did not understand that this interest was taken into consideration at all.

Digressing, Senator O'Mahoney offered the informal opinion that, in his mind, the answer seems to lie in requiring national charters for corporations doing business upon a national basis. That is, the federal incorporation of corporations, a subject already treated in legislation introduced by Senator O'Mahoney.

Considerable discussion ensued Tuesday on the pipe-line situation both as to crude and gasoline lines and served to emphasize the stress being laid on this feature by the committee.

O'Mahoney Much Interested in De Golyer's Statement

AN independent producer, E. De Golyer, Dallas, Tex., presented a compendious statement, from which the following extracts are taken:

Proration, as we now have it, is a developing production control, by no means perfect, but subject to improvement as we gain experience in its operation. Its chief weaknesses are that it is not yet exercised by all oil-producing states, and that it is sometimes unequal and uneven in its effects in different states. The necessity, real or believed, of allowing a continuance of bad practices started before regulation became really effective, such as those resulting in the present absurdly high well densities in the East Texas and Oklahoma City fields; the political pressure brought by various interested groups; the continual necessity for readjustment forced by the crowding in of newly discovered production; all these and many more make proration even within the limits of a single state almost too complex to be administered without many apparent injustices and inequalities.

Actually, the prevention of waste has been achieved generally by a slowing down process—by a restriction of the daily rate of production. Since the preservation of equity between the various producing interests is an essential part of the proration concept, in fact the very term connotes equity, the simplest way to continue the relative positions enjoyed before restriction seemed to be by projecting the past—by basing allowables upon potentials.

Achievements of Proration

While this may have been the most practical solution in the very beginning, we realize more and more that it is not a true conservation solution, and that more weight must be given to other factors, notably reserves.

The greatest achievement of proration, to the present, has been directed to insuring length to the period of adequate supply. Too little has been done toward insuring conditions of reasonable price through the necessary prerequisite of providing reasonable cost.

In my opinion, this is in part the fault of the industry and in part the fault of the states. The industry has done much in speeding up drilling rates and so keeping costs down in the face of constantly increasing depth to which it is now required to drill. To my mind, however, the practice of now drilling 7-inch holes to the producing sand, as was done in the old days of open flow, and then choking them to a fraction of an inch at top and bottom, as is often required at present in order to properly restrict to daily rates of production not likely to be exceeded for many years to come, if indeed ever, is subject to improvement.

Likewise, the common policy in some states of basing allowables too much on potentials and individual wells has encouraged and often forced the producer to drill his wells on a pattern of absurdly close spacing. This has its effect on cost. If the daily allowable can be produced from one well instead of four and, if over the long period of time available, as much oil can be produced per acre by one well to 40 acres as by four wells for the same area, it is wasteful to produce oil at four times the necessary drilling cost per barrel.

We do not know too much about well spacing. Unfortunately, the individual oil pool, once exhausted under a certain well pattern, cannot be restored and again produced under a different well pattern for comparative purposes and an oil pool is a unique thing.

Oil-Producing Factors

We do know, however, that the amount of oil which can be produced from a single pool depends upon many factors, among the most important of which are the volume and physical characteristics of the oil, the permeability and water and gas content of the sand, the pressure of the edge water or water drive, the energy of the gas dissolved in the oil, the well density, and the rate at which the oil is produced or the time factor. The effect of many of these factors is, in part at least, interchangeable. Heavy water drive or long time would compensate for low permeability. Extremely high permeability would shorten the time required for production. I believe that in the average pool with water drive, a well tapping the reservoir at its highest point could produce effectively the entire amount of oil recoverable from the field by ordinary methods. This concept is of greater theoretical than practical importance, however, for the time required might run into hundreds of years. I cite it only to emphasize the importance of the time factor. Now by the very nature of effective proration we have had the time factor increased substantially. It is doubtful whether we will again see conditions under which half the oil from a prime lease can be produced during the first 12 months of its exploitation, half the remaining oil produced during the next 5 years of its life and the residue produced during the succeeding 10 years, as was common during the preproration days of open flow. Too much emphasis can hardly be placed upon the importance of this lengthened time factor in the exploitation of our oil pools. With lengthened time factor, we can decrease the density of wells and widen our spacing and increase the amount of recoverable oil. To what extent the spacing distance can be increased is a special problem for each pool but, in my opinion, generally we can go far beyond any pattern used today.

Approximately 10 companies own half the gross proved oil reserve of the United States. Outstanding with regard to reserve position is the Standard of New Jersey group, including the Humble Oil & Refining Co., with almost 2½ billion barrels of gross proved reserved. It is followed by four companies with gross proved oil reserves of the order of magnitude of a billion barrels each. Approximately three companies are in the ½ to ¾-billion-barrel class; 9 or 10 companies in the ¼ to ½-billion-barrel class; six to eight companies in the 100 million to 200-million-barrel class, and probably a dozen companies in the 50 to 100-million-barrel class.

On a net basis approximately one-third of the nation's reserves are owned by so-called old Standard companies; one-fourth by small companies or individuals, some of which have a reserve of as much as 25 million barrels; one-fifth by the 10 principal independents; and from one-sixth to one-eighth is royalty owned by landowners and royalty owners.

Whether by force of circumstance or design, the big companies are able to market their reserves less rapidly than are the small companies and individuals. The 10 largest companies estimated to own one-half the gross proved reserves

JOHN E. SHATFORD

E. DE GOLYER

Mr. Shatford, on the witness stand, declared, "There exists no genuine compliance with the intent and purpose of the Interstate Commerce Act," in summarizing his views on pipe lines

In response to questioning on price behavior and price leadership, Mr. De Golyer answered: "There is a tendency for all price postings to go together although there may be various 'leaders'."

for the United States, had a gross production of 36.8 per cent or a net of 31.5 per cent of the nation's production. The thousands of individuals and smaller companies owning the other one-half of the proved reserves had a gross production of 63.2 per cent. The Jersey group's reserves are being produced at approximately 40 per cent of the rate averaged for the rest of the nation's production.

Chairman O'Mahoney developed the point with the witness that the Standard companies own a much larger share of the oil reserves today than at the time of the old Standard Oil trust.

The chairman also asked the witness as to what circumstances prompted him to say that the big companies market their reserves less rapidly than the smaller units. "Is this by force of circumstances or by design?" queried Senator O'Mahoney. The witness said there was a question in his mind as to that. It may have been due to the more intensive operations of the small producers. The witness then declared that over 90 per cent of the independent producers are solely producers, and that they do not operate refineries. Mr. De Golyer pointed out that the majors can produce more slowly, possibly, because they have a large string of investments in other industry equipment behind them, including pipe lines.

The witness gave the independents credit as great prospectors. "They seem to like that kind of business," he asserted. The small companies lead in new discoveries over the majors by two to one.

"Does the prospector get the wells and the big companies the reserves?" queried Chairman O'Mahoney. "That may be so," replied the witness.

The opinion was expressed by the witness that with the current practice of proration and conservation "we are in a transition period as to methods of production." The possibility of continued reduction in the cost of production (the price of crude to the refiner) in the future is anticipated, Mr. De Golyer said, "if we operate at an optimum basis with well spacing continued to be practiced."

The witness in response to Congressman Williams said proration is restrictive of production and "must affect prices."

The witness at this point offered a series of assertions in rebuttal of material offered Friday by Karl A. Crowley. Mr. De Golyer pointed out that even those most violently opposed to proration as presently administered were in favor of it if it were based upon engineering standards. "There are not many fields in the United States being produced under optimum flows now, despite what's been said," asserted Mr. De Golyer. "If such were the case," he continued, "there would not be enough oil being produced." All are producing above optimum flows, he said.

Congressman Williams inquired as to the average cost of producing a barrel of crude. The witness disagreed with the cost figure cited in December 1935 by the Petroleum Advisory Board, saying that it included interest but did not include other important items. "A weighted cost for all U. S. groups would be within a fraction of 80 cents per barrel, according to the advisory board," he said, "but in my opinion the average cost is higher." For the Mid-Continent it would run between 80 and 90 cents; between 90 cents and $1 in the area east of the Rocky Mountains and between 70 and 80 cents in California.

Questioning then turned by Clarence Avildson, of the Department of Commerce, to drilling costs and drilling of unnecessary wells. The witness said petroleum engineers of the future would regard present-day 40-acre spacing about as we consider the one-well-per-acre standard of Kettleman Hills field. Future wells would drain a considerably larger area.

F. E. Berquist, of the Department of Justice, sought to ascertain the possibility of compiling accurate production costs. He said all they have been told is that that is impossible to obtain. Mr. De Golyer said the wide variation among methods of costing within the industry makes it impossible to quote flat figures. "Costs represent cost of present oil plus the cost of finding new oil."

The witness at this point answered the contentions of a previous witness, John B. Dailey, Houston, Tex., that proration was operating to confiscate oil under his holding of 20 acres in the Old Ocean area, Texas. Mr. De Golyer said Mr. Dailey was offered an opportunity to combine his 20 acres with another 20-acre holder and thereby meet the 40-acre spacing requirement. Smaller acreage holders in 11 other instances solved their dilemma in this way. "In my opinion equity was offered Mr. Dailey. This is the type of problem which arises in an attempt to operate on a prorated basis," the witness concluded.

Chairman O'Mahoney observed that the Dailey case presented an instance of a problem of how to deal with owners who do not have the capital to develop their holdings.

Mr. Cox asked questions on posted prices, seeking to ascertain whether there was a controlling influence consciously exercised by the majors. Question: "What is your experience with the behavior of prices? Is there any price leadership?" Answer: "There is a tendency for all price postings to go together although there may be various 'leaders'." The discussion brought forth the remark by Mr. De Golyer that "at the present time we are in a buyer's market." Chairman O'Mahoney interposed that "the gist of the complaints of the small producers is that the majors fix the price of oil through price leadership. It is sometimes alleged it is done through agreement. It is not necessary to have an agreement when so large a percentage of the reserves are owned by the majors, is it?" Mr. De Golyer said: "I am much better off under a posted price system—a system which brings the world market to my well; I like it."

Attorney Cox asked Mr. De Golyer: "What factors go into making up that price? It's not very mysterious to me. I've been following prices for 20 years and I have understood enough at all times to believe that they are not entirely arbitrary but that there is enough reason for them. What caused the drop in crude prices in August?"

The witness answered: "I suppose because there was a tremendous production in Illinois which was being offered on the market at prices 20, 30, and 35 cents under comparative prices."

Chairman O'Mahoney asked: "Is there anything the committee could recommend to Congress that would tend to eliminate the basis of the independents' complaint on price postings?"

"I regret to say I can't help you," said Mr. De Golyer.

Colonel Thompson's Conclusions

Col. Ernest O. Thompson, chairman of the Interstate Oil Compact Commission and member of the Texas Railroad Commission, presented a statement from an administrator's viewpoint Tuesday afternoon. His conclusions were:

"Thus I believe I am able to report as a result of observation from long close contact as administrator, that there is no crisis in oil-producing industry. The oil-producing states are handling their own conservation problems effectively and I believe with increased efficiency in the application of sound and demonstrated engineering principles. There is no wasteful overproduction and I know we can truthfully report, through this committee, to the nation that the oil-producing states are ready and able on call to meet any emergency that might face us and we could produce all the oil that might be needed in any possible emergency and it can be done without causing physical waste.

"We have had and are having hearty enthusiastic cooperation from the Department of the Interior through its Conservation Department, from the Bureau of Mines, through its monthly forecast of market demand and with the assistance of the Connally Act, I see no need for any further federal legislation on conservation affecting the oil-producing business in America. Waste is being prevented. Recoveries are being increased. Reserves of oil are being built up. These in short are the accomplishments of the oil-producing states."

(Other testimony on Page 98)

Left: Harry A. Wallace, Jr., United Fuel Gas Co., Charleston, W. Va., and president of the West Virginia Oil and Natural Gas Association; Edwin Robinson, the association's secretary, and Thurman Myers, chief geologist, Carnegie Natural Gas Co., Pittsburgh, Pa.

West Virginia Gas and Oil Men Meet

By J. P. O'DONNELL

CHARLESTON, W. Va., Sept. 29.—"The future management and control of the natural gas business . . . will soon devolve upon a government bureau staff, and those who are now responsible for its development and management will become mere automata for the carrying out of the edicts promulgated by bureau agencies," Harold A. Ritz, general counsel, United Fuel Gas Co., Charleston, told oil and gas men attending the annual meeting of the West Virginia Oil and Gas Association here this week. The meeting again proved one of the most popular eastern oil and gas conventions with a total registration exceeding 600.

Mr. Ritz's statement concluded a study of the federal Natural Gas Act which he presented at the final session. As a result of this act, he said, "the entire management and control of the natural gas industry is vested in the Federal Power Commission and, as a practical matter, what the commission does or requires to be done is final and conclusive.

"It is true that the act provides that an appeal may be taken to the Circuit Court of Appeals," he continued, "but it is also prescribed that as to facts, the findings of the commission shall be conclusive if there is any substantial evidence to support the same. The term 'substantial evidence' has no definite meaning. It might be said that any testimony introduced that tended to prove something is substantial evidence for it would not be admitted if it were not.

"The effect of this provision, if it is upheld by the courts, is that conclusions of the commission are the last word. The tribunal that has the power to finally determine the facts upon which rights are dependent is, in effect, possessed of the attributes of infallibility."

After pointing out the lack of necessity for the control which the act gives the federal Government, Mr. Ritz said: "It will thus be seen that from the standpoint of the necessity for the protection of the consumer, the local commissions had proven themselves entirely adequate; so that there was really little, if any, reason for the passage of the act upon this ground. The lack of necessity for the passage of the legislation, for the reason generally given for its passage, suggests that its proponents may have had an undisclosed purpose.

"The activities of the national Government in the last few years have been so extended that nearly every enterprise is under federal control and supervision of some kind; and it is not unreasonable to suppose that those interested in advancing this legislation had in mind not only the avowed purpose, but also the purpose of bringing the vast business of producing, transporting and selling natural gas under the regulatory control of a federal bureau, thus removing it from the control of local authorities. No doubt in a short time local utility commissions will be as powerless in the matter of regulating the rates and practices of the large natural gas business as they are now in the matter of railroad rates."

All-Embracing

The all-embracing definition of a natural-gas company insures the inclusion of all branches of the industry in the scope of the commission's powers, Mr. Ritz held. He concluded from a study of the definition that "in the light of recent holdings as to what is interstate commerce, we conclude that every phase of the natural-gas business and every activity touching the business from the time a lease is acquired for the purpose of drilling until the gas is finally delivered to the consumer, is subject to regulation by the federal Government. It is true that independent producers are not specifically mentioned. To do so might have defeated the legislation. A definition of what shall constitute a gas company, subject to provisions of the act, is, however, inserted, which, by proper interpretation, may be made to embrace every one engaged in the business."

Mr. Ritz assured the independent producers that they would soon feel the effect of regulation. "It may be some time before the commission makes an attempt to regulate directly independent producers but that the time will come can scarcely be doubted. The commission is given the power; and there is little doubt that it will exercise all the power that has been given to the fullest extent. In fact, it would be derelict in its duty if it did not carry out to the limit the provisions of the act of Congress."

Congress has directed the commission, he said, to fix rates, to determine the cost of production and transportation, to ascertain the cost of pro-

Left: Harry A. Wallace, Sr., president, United Fuel Gas Co., Charleston, W. Va., and Dan S. Keenan, president, Carnegie Natural Gas Co., Pittsburgh, Pa. Center: Francis Williams, superintendent of repressuring operations, and George Ward, West Virginia and Kentucky superintendent, South Penn Oil Co., Pittsburgh, Pa. Right: C. F. Stevenson and P. H. Curry, vice president and president, respectively, of South Penn Oil Co.

ducing properties and to evaluate them, to prescribe the form in which accounts shall be kept, to prescribe the rate of depreciation on properties, to regulate dealings of officers in their companies' securities, to investigate any and all practices as it may see fit. The act provides that the commission will be given an inventory of all properties and a statement of their original costs; that no extension of facilities will be made without its consent; that every natural-gas company shall file annual and periodic reports as required by the commission and that the commission is authorized to receive, investigate and, if necessary, prescribe the remedy for all complaints.

After reviewing recent court decisions, Mr. Ritz issued a warning to other industries which so far have escaped federal regulation when he said, "While this identical question (bringing independent producers within the regulatory power of the Public Utilities Commission) has never been passed upon by the Supreme Court of the United States, still I think it is safe to say that the modern trend is to extend the power of governmental control to a great many enterprises which have not heretofore been considered as proper subjects of public regulation."

Russell B. Brown, general counsel for the Independent Petroleum Association of America, was unable to attend the meeting and his talk was read by Minor S. Jameson, Jr. The paper reviewed the history of oil legislation and urged one further piece for the future: "It has long been urged that natural resource industries should be given authority by law to make voluntary agreements, subject to the approval of some proper federal agency. If producers of petroleum had no responsibility for conservation, then such agreements would be unnecessary. It is because of their realization of this very definite and important responsibility that we have urged upon Congress the passage of such legislation.

"No monopolistic practice would be forwarded by these agreements. Since they could be canceled at any time by the supervising federal agency, the public would be insured against their use for improper purposes. With this item of legislation added to other laws already on the statute books, the industry would be in a much sounder position than it occupies today."

George W. Keller, independent gas producer, Huntington, W. Va., spoke on the need for cooperative endeavor in the industry. "The three actors in this drama are," he said, "the lessor, the nonutility operator and the utility and they are indispensable to each other. Only by organization and cooperation can we be effective in matters of legislation concerning our industry, one of the most important of which is taxation. . . . If we will all cooperate in the work necessary to obtain our objectives, we will be rewarded by a fair adjustment of these costs."

D. R. Knowlton, production superintendent, Phillips Petroleum Co., Bartlesville, Okla., discussed production practices in the Mid-Continent, declaring that uneconomical methods are gradually, but with increasing momentum, giving way before conservative methods that result in greater and more profitable recovery. From the destructive rule of capture we are advancing toward such highly desirable practices as unitized development of pools, he said. He regarded the future with a high degree of optimism, based on the belief that wider spacing, pressure maintenance and unitization will eliminate competitive development. "These things will minimize booms and depressions," he said, "and will bring hitherto unknown stability to the industry."

C. M. Newcomb, of Candler, N. C., addressed the annual dinner which attracted more than 700 oil and gas men and urged this country's industrial leaders to exert every influence to keep it neutral. He said the so-called democracies of Europe have abandoned those principles and predicted that if we get into war "our country will become a dictatorship, just as the democracies of Europe have become in order to fight dictator states." He questioned the ultimate effect of such measures on domestic industry and reminded his audience that freedom of enterprise is difficult to regain once it has been relinquished.

Beverly Broun, Brawley-Reid Oil & Gas Co., Charleston, read a review of the association's activities, citing in particular the reduction effected in oil property taxes. Formal welcomes were addressed to the association by D. Boone Dawson, mayor of Charleston, and Homer A. Holt, governor of West Virginia.

Harry A. Wallace, Jr., United Fuel Gas Co., Charleston, was reelected president; Wallace B. Gribble, of Clarksburg, was elected vice president to succeed W. P. Kerwood, of St. Mary's, and Edwin Robinson, of Fairmont, was reelected secretary-treasurer. Members of the nominating committee were Joseph M. Low, Clarksburg, chairman; George L. Hinerman, Weston; N. H. Reardon, Jacobsburg; James W. Ramsey, Huntington, and Frank Bickel, Parkersburg. The resolutions committee was headed by D. S. Keenan, president, Carnegie Natural Gas Co., Pittsburgh.

An added feature this year was a field trip during which the conventioners attended a barbecue at the G. L. Cabot, Inc., warehouse at Sissonville, where a Hereford steer, provided by Oscar Nelson, president of United Carbon Co., Charleston, was barbecued. The trip itinerary included cementing of 5,000 ft. of casing at the United Fuel Gas Co.'s W. H. O'Dell well, shooting of Columbian Carbon's A. H. Campbell well, tubing underpressure of United Fuel's W. J. Glass well, the drilling in of United Fuel's A. A. Beane well and the inspection of Columbian Carbon's dehydration plant.

Lack of Tankers Beginning to Affect Refined Market

By H. STANLEY NORMAN

NEW YORK, Oct. 3.—The pressure of an almost complete lack of tankers for petroleum export movement to belligerent European nations, or to neutrals requiring navigation through danger zones in the Atlantic, was beginning to register on refinery markets at the start of this week.

There has been no relinquishment of the recent price gains in Gulf Coast and North Atlantic markets, but observers reported Monday that the undertone of the market appears slightly softer than at the middle and latter part of the preceding week.

The only boats reported loading at Gulf Coast and North Atlantic supply bases for trans-Atlantic traffic are British and French flag vessels. Tankers of Norwegian registry and those flying flags of other neutral European countries are unavailable for service in trans-Atlantic movement. All charter provisions currently agreed to by Norwegian tanker owners are accepted subject to approval of government authorities. Norwegian boat charters are generally approved for Caribbean, South American and Japanese service, but since outbreak of the European war no vessels flying the flag of Norway have accepted petroleum cargoes for European delivery involving discharge either to belligerents or countries reached through dangerous waters.

Arrival and loading of French and British tankers is covered with elaborate secrecy, but men in charge of making deliveries to these vessels report that traffic has tended to slow up slightly from normal since hostilities began. Combined with withdrawal of Norwegian and other Scandinavian boats from trans-Atlantic service, the net result has been a contraction of normal movement to European countries.

Adjustments are being made and will continue to be made to bring petroleum shipments to Europe in line with the demand. Based on the inquiries now in hands of refiners, Britain, France and many of the neutral countries are interested in increasing oil purchases in the United States but are, at least temporarily, blocked because of inability to obtain tankers.

The backing up of material in the hands of Gulf and East Coast refineries normally supplying the trans-Atlantic export demand has not reached serious proportions, but the inability to obtain boats may depress the market until the British and French requirements force those countries to supply the relief in shipping conditions. So far as could be learned in New York this week, normal movement of French and British flag tankers is continuing between the Persian Gulf and Netherland East Indies, bases of supply which normally contribute about 35 and 20 per cent, respectively, of peace-time requirements of the two nations. The movement from Netherland West Indies and from Trinidad in British, French and other foreign flag boats has been maintained without serious interruption, reports here indicate.

It is regarded here as only a matter of time and intensity of warfare until Britain and France are forced to the United States for their increased petroleum requirements. The shorter distances from bases of supply on the American Coast, as compared to the Persian Gulf, would enable the French and British tanker fleets to carry approximately a third more oil.

American flag tankers are considered too expensive to operate in trans-Atlantic service, partly because of the greater initial cost and partly because of materially higher wages obtained by crews.

Tide Water Associated Acquires Large Holdings in K.M.A. Pool

WICHITA FALLS, Tex.—One of the largest oil transactions in North Texas was consummated late last week, in which acreage and production in the K.M.A. field were sold for $1,500,000. Purchase was made by Tide Water Associated Oil Co. from King Oil Co. of this city, with the terms three-fourths cash and the remainder in oil, in which the former acquired a one-half interest in 653 acres of proven and semiproven leases and 40 producers in the K.M.A. field. Perkins & Cullum, Wichita Falls, retained their one-half interest in the wells, which are on the Pettit, Ferguson and Mangold leases and have a total allowable of 12,000 bbl. monthly.

Another deal involving a consideration of $175,000 cash was also completed. In this transaction A. F. Graf and W. G. Graf, representing Granite Trustee No. 2 of Henderson, Tex., purchased from Melat & Graham of Wichita Falls 185.7 acres out of the N. H. Martin lands in the northwest part of the K.M.A. field. Two 4,000-ft. producers were included in the transaction. The company will open an office in Wichita Falls and begin immediate development of its new property.

A third deal completed late in the week involved 196 acres of potential production in the Ligon area of the Hull-Silk pool, northern Archer County. In this transaction A. R. Dillard and White-Duncan of Wichita Falls acquired acreage from A. P. Nichols of Kansas City, consisting of Blocks 2, 3, and 4, Section 33, A.T.N.C.L. Survey, for $52,000, paying $13,000 cash and the balance in oil.

Loco Hills Field Is Most Active in New Mexico

By D. H. STORMONT

ARTESIA, N. M., Oct. 2—The Loco Hills area of Eddy County, New Mexico, is developing into the most important discovery in that county in recent years. Discovered in January of this year, the field now has 33 producers scattered over a semiproven area of at least 4,500 acres. Production is obtained at the comparatively shallow depth of 2,600-2,800 ft., which, in conjunction with the fairly high allowable of 65 bbl., offers attractive drilling. Due to these factors, activity has steadily climbed during recent months until the field is now the most active in New Mexico. At the last of September there were 33 wells drilling with seven active locations.

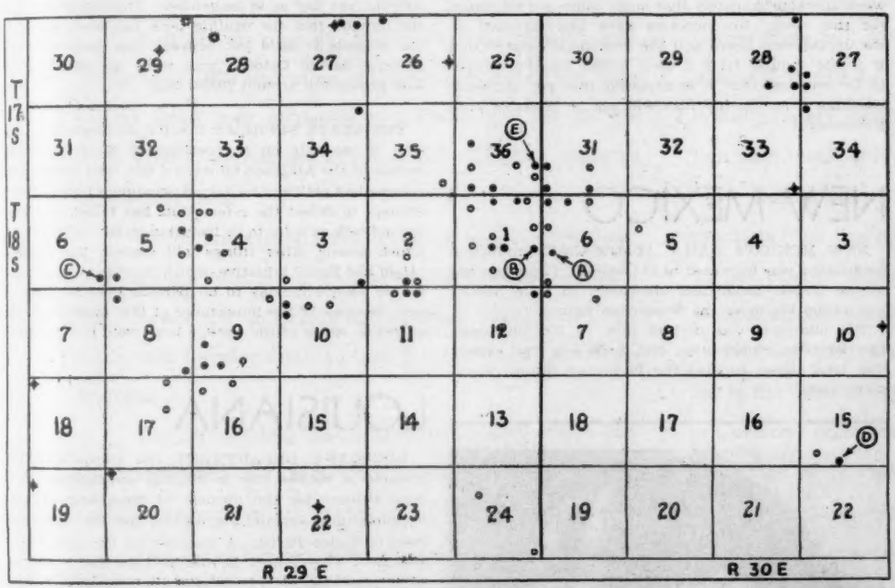
The discovery well in Loco Hills was H. E. Yates' No. 1 Yates in NW SW Section 6-18-30, shown as well *A* in the accompanying plat. The discovery was completed on January 25 for 506 bbl. daily, flowing from a saturated pay at 2,806-38 ft. In March, Franklin Petroleum Co. completed a northwest diagonal offset in Section 1-18-29 (well *B*); but the area remained quiet for the next 2 months. In May, Yates & Strope completed their No. 1 Travis in SE SE Section 6-18-29 to extend production over 5 miles to the west (well *C*). Drilling then began to increase with the result that several wells have been completed in the intervening area, and the field's productive limits extended north, south and east.

Most recent extension of the field was W. H. Martin and others' No. 1 Gates in SE SW Section 15-18-30, completed September 9 for an initial potential of 25 bbl. of oil daily, pumping, after shot. This producer (well *D*) extended possible productive limits over 4 miles to the southeast of the discovery well. No other wells have been completed between it and the discovery. However, No. 1 Gates topped the pay at 3,204 ft., and, since the regional dip is 60-70 ft. per mile to the southeast, it is very possible that future drilling may prove it an extension.

No dry holes have been completed in the field proper yet, but several tests have been unproductive in the surrounding area. As seen on the accompanying plat, productive limits are apparently defined on the southwest and west sides. On the northwest and north sides several dry holes have been drilled and a 3,150-ft. producer in Section 34-17-29 found the Loco Hills pay barren. Two dry holes on the east side were carried to a total depth of 3,457 ft. and 3,318 ft., respectively; possibly establishing productive limits on that side. To the northeast, some 2½ miles from the field's present limit, is the 3,200-ft. production of the Grayburg-Jackson area.

Production is obtained from the "Artesia" sand pay (Permian), with accumulation being thought due to lensing out of the sand to the north and west on lime highs, forming an embayment. As stated, the regional dip is to the south and east

(Continued on Page 32)



Left: Plat of Loco Hills area, Eddy County, New Mexico. Below: After completion, masts of the A-frame type are erected on most wells, and separators are usually installed. Bottom: Practically all drilling is with spudding machines of the type shown here. The machines are powered by 80 to 125-hp. engines with butane and diesel power in the majority

ARKANSAS

FIELD ALLOWABLES IN ARKANSAS in October remained unchanged at 65,300 bbl. per day, although increases were asked for the Schuler field's Jones-sand and Reynolds-lime reservoirs. The commission also denied the request of two operators in the Jones-sand horizon of Schuler, for an acre-foot-pound formula as basis of allocation, retaining the existing acre-pound basis. Two drilling tests in the Magnolia field, which were found to be located approximately 200 ft. from the centers of their respective 40-acre units, as required, were ordered to whipstock and drill to the Smackover lime at the center of the unit by directional methods.

KANSAS

AN ALLOWABLE PRODUCTION of 170,600 bbl. per day in Kansas in October equals the U. S. Bureau of Mines estimate of demand but is 23,395 bbl. over the September allowable. While no comment was made by the Kansas Corporation Commission in announcing the increased figures, it is taken for granted by oil producers that they come in response to actual demand for Kansas oil.

TEXAS

PLANS FOR RESTORATION OF 7-DAY production in Texas were abandoned last week when the Railroad Commission found that it was impossible to keep within the U. S. Bureau of Mines estimated demand for October, and at the same time maintain the policy of not cutting any flowing well below the marginal limit if the well is capable of making its allowable. The commission issued an order shutting down all wells on the nine Saturdays and Sundays of October, and in addition on the first Monday (October 2) and the last Friday (October 27) to bring the total to 11 shutdown days. Thus continuance of the practice of shutting down production a certain number of days each month is being construed by some operators as an acknowledgment on the part of the commission that it can no longer meet requirements of both the estimated demand figure and its interpretation of the marginal-well law without resorting to production holidays. Unless, of course, consumer demand for Texas oil should show a decided increase.

Effect of the 11-day shutdown will be to lower the basic allowable of 2,015,712 bbl. to around 1,360,563 bbl. daily for October. Thus actual daily production will be about 84,237 bbl. below the demand figure set by the Bureau of Mines for Texas production, estimated to be 1,444,800 bbl. daily. In the main, the October order retains field allowables as of September 18, except for the readjustment made by cutting back allowables of wells in new fields to that of nearest comparable field and cutting the allowables of some wells to the level that they could produce.

District allowables under the new order and on three preceding dates, exclusive of all shutdowns, are as follows:

	July 1	Aug. 1	Sept. 11	Oct. 1
Southwest ..	307,674	319,138	328,799	318,798
Gulf Coast ..	282,423	295,983	296,385	298,928
East Central .	118,630	122,565	123,156	122,435
East Texas ..	522,668	523,522	523,909	690,000
West Central .	67,231	69,460	71,565	64,890
West Texas ..	271,798	294,398	309,157	301,532
North Texas .	127,820	127,137	131,806	128,556
Panhandle ..	90,026	91,019	91,820	*90,573
Total	1,788,270	1,843,222	1,876,597	2,015,712

*Includes Moore County, 1,721 bbl., and Osborne area, 611 bbl.

In addition to the Rodessa field, the following fields were exempt from the shutdown order: In District 1, Eckert, Minerva-Rockdale and Somerset; District 2, Mission River; District 3, Barbers Hill, Boling, Damon Mound, Goose Creek, Gillock, Dickinson, Hammon (deep), High Island, Hitchcock, Old Hull, New Hull, Lockridge, New Mykawa, Old Ocean, West Columbia, and New West Columbia; District 4, Charamousca and Midway; District 5, Corsicana, Currie, Mexia, Powell, Richland, Wortham and Wortham (shallow); District 6, Boggy Creek; District 7-C, Big Lake, McMillan and World; District 8, Eaves, Garza, Hendricks, Howard-Glasscock, Iatan-East Howard, Leck, Shearer, Snyder, Taylor-Link and Tobarg.

REQUESTS FOR INCREASED FIELD ALLOWABLES occupied the discussion at most of the Railroad Commission hearings last week, and will continue to do so this week. Hearings were held on some 20 fields last week and approximately that many more are scheduled for this week. No increases have been granted on the applications heard and the commission stated that it would require from 2 to 3 weeks for the records to be revealed, thus it is expected that any increases resulting from the hearings will not be effective until November 1.

STATE CAPITALS

NEW MEXICO

NEW MEXICO'S DAILY ALLOWABLE production for October was increased to 114,200 bbl. Thursday, one of the largest production allowables in state history and 14,200 bbl. over the September figure.

The allowable was divided into 111,200 bbl. daily for domestic consumption and 3,000 bbl. for export. The total figure equaled the Bureau of Mines recommendations.

GOVERNOR CARL E. BAILEY, under whose administration Arkansas has enacted an effective conservation law, was born at Bernie, Mo., October 8, 1894; earned an LL.D. degree at Subiaco College, and has been practicing law since 1924. He was elected governor in 1936 and reelected in 1938.

MISSISSIPPI

AT A HEARING BEFORE THE STATE OIL and Gas Board last week regarding rules and regulations governing development of the Tinsley field, in Yazoo County, the structure was defined as being 5 miles long, north and south, and 3½ miles wide, east and west. A spacing rule of one well to 40 acres was adopted at the hearing, although it was stated that conditions may arise that would require the board to alter the regulation. By the rules of the board, only one well may be drilled on each drilling or spacing unit to each producing horizon, and in all instances said well shall be located as nearly as practicable in the center of the unit upon which it is drilled. Before an exception to the rule is granted, the applicant must make a bona fide effort to pool such tracts, with less than 40 acres, so as to establish at least a 40-acre drilling and spacing unit.

CALIFORNIA

THE CENTRAL COMMITTEE of California Oil Producers set the allowable production for October at 598,300 bbl. per day. Producing wells in the top bracket will be permitted to produce 220 bbl. per day, instead of 230 bbl. per day as in September. The committee is of the opinion that the drilling peak has been passed in the Montebello field but believes that projected completions during October may show an aggregate initial production around 70,000 bbl.

THE STATE SUPREME COURT declined to issue a writ of mandate on the petition of M. E. Atkinson, author of the Atkinson oil control bill, who alleged that referendum petitions contained fraudulent names. Every attempt to defeat the referendum has failed, and present indications point to its inclusion on the special ballot, which among other things will contain the so-called "Ham and Eggs" initiative, which provides the payment of $30 each Thursday to all persons over 50 years of age. Because of the importance of this measure on the economic status of the state, a large vote is anticipated.

LOUISIANA

LOUISIANA DEPARTMENT OF CONSERVATION granted a request for a hearing on October 10 in New Orleans for the purpose of discussing proposed revisions in rules and regulations for the Shreveport field of Caddo Parish. A majority of the operators in the field, represented in the petition for a hearing, favor doubling the present gas-oil ratio limit of 2,000 cu. ft. per barrel, because of greatly increased gas production. The ratio limit further limits production in inverse proportion to the actual and allowable ratio on Shreveport wells.

OKLAHOMA

THE OKLAHOMA CORPORATION COMMISSION increased allowable production in October to 424,200 bbl. per day. The September allowable was 384,950 bbl. per day. The October figure represents a 10 per cent increase over that for September. The total for prorated areas was increased from 229,950 bbl. to 277,553 bbl. and the unprorated or stripper areas decreased from 155,000 bbl. to 146,647 bbl.

THE COMMISSION HAS SET HEARING for October 6 on application of the Big Chief Drilling Co. for adjustment of potentials on three wells in the Oklahoma City field. Present potentials were fixed by an operators' committee several months ago and later ordered by the commission.

TEN-ACRE WELL SPACING has been ordered for a Calvin-sand zone in the East Earlsboro pool of Seminole County, on petition of the Magnolia Petroleum Co. Area so zoned includes the S½ S½ Section 7, the SW SW Section 8, and W½ W½ Section 17, and all of Section 18, in Township 9n-6e.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Avoid Overdraft

Increased allowables announced for October in certain states, and continued heavy crude runs to stills raise the question whether producers and refiners are not endangering the favorable outlook for this year and next.

Refiners, as a group, who have been running from 50,000 to 100,000 bbl. more crude to their stills than they should have over a period of several months, for the week ending September 23 ran within 5,000 bbl. daily of an all-time peak.

What basis was there for such heavy operations, now that the season for greatest gasoline consumption is over, passes the understanding of those who are in close touch with developments in both the export and domestic markets.

The outstanding result is that gasoline stocks are not undergoing the reduction needed as a basis for healthy operations this winter and next spring.

Due to the big reduction in crude stocks, as a result of the shutdown and later curtailment of production operations, it was naturally expected that refiners would reverse their policy and bring their plant operations down to the line of requirements.

If this had been done, five or six million barrels of gasoline would have been taken from storage in September reducing inventories to working requirements for this season of the year. Gasoline stocks are now at least five million barrels above this minimum figure.

Had this been done it is reasonable to assume there would have been a greater tightening of the motor-fuel markets, extending from the refineries to the filling stations, a needed development to place the industry's operations on the profitable basis to which it is entitled.

This could have been done without running any risk of shortage in any of the other refined products.

In this connection, the Department of Commerce pointed out this week the danger of overestimating export demands, due to the war, a warning of particular pertinence to the oil industry.

So far as the oil industry is concerned, it is apparent there will be a decrease, rather than an increase, in export demand at least for a short period. This is due to the dangers that have developed in water transportation as a result of hostilities.

Before the war began exports of crude and refined products from this country were about 550,000 bbl. daily, 40 per cent of which was crude oil and the remainder several refined products.

Over 150,000 bbl. daily of our shipments were going to the three European nations now at war. Shipments to Germany have been stopped, and there are delays in movement of petroleum to France and Great Britain.

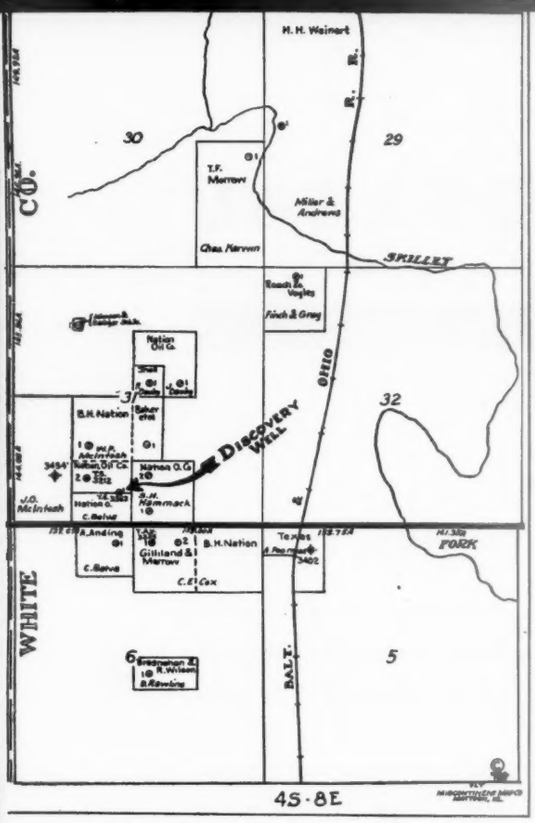
Coastwise shipments to Canada, our principal export customer, are not normal as is the case to several neutral countries in Europe. Insurance rates have jumped adding greatly to delivered costs. It is premature to expect any expansion in foreign trade during October as a result of the war. It is assumed that this condition will be temporary.

It is entirely possible that some crude oil and refined products will back up at several shipping points for a few weeks, creating an unhealthy market situation, if due allowance is not made for it in crude allowables and refinery operations.

Obviously it is far better to restrict producing and refining operations to be on the safe side. Operators can much more easily expand their operations to take care of a demand they did not expect than face an unsatisfactory market situation with available oil that buyers cannot ship.

Outlet Lack Slows Mill Shoals Activity

By HARRY F. SIMONS



Plat of Mill Shoals area showing discovery well and present extent of the field

CARMI, Ill., Oct. 2.—White County's first oil pool, the Mill Shoals field, in Township 3s, Range 8e, is suffering from being between two major fields, Salem and North Griffin. Field activity, for a time quite intense, has decreased to only a few drilling wells, and it is probable that it will continue at its present slow pace. Lack of a pipe line in the area and a generally unfavorable market situation are being felt.

There are few major companies interested in the area and the only one to attempt any prospecting to date has been the Shell Oil Co., Inc., which drilled a dry hole offsetting the second completion in the field. The possibility of a large purchaser entering the field is thus reduced. All of the present production in the pool is in the hands of independents and their closest market is a 2,000-bbl. refinery at Merriam, about 15 miles away. Another outlet is in prospect—a refinery in the process of construction at Mill Shoals.

The discovery south of the town of Mill Shoals received its principal acclaim because it was the first commercial producing well in White County. It was Anding & Nation's No. 1 Belva-McIntosh, C SE SW Section 31-3s-8e, completed July 11 in McClosky lime at 3,406 ft. for an initial production of 76 bbl.

The operators of the first well had been impressed with the show of oil in the Aux Vases sand, and the second test was drilled to that horizon. It was Anding & Nation's No. 2 Belva-McIntosh, NW SE SW Section 31-3s-8e, which topped the Aux Vases at 3,212 ft. and was bottomed at 3,258 ft. with 5½-in. casing set at 3,210 ft. On July 21 the well flowed 685 bbl. in 15½ hours and after a few days on production was classified as completed with an initial of 576 bbl. daily. This came as a surprise to many Illinois operators and was more startling because of the dearth of real discoveries in the basin up to that point this year. Trading in the area became quite active.

On a farmout from Anding & Nation, Shell Oil Co., Inc., got the first dry hole in the area, the west offset to the Aux Vases discovery well. It was No. 1 McIntosh, NE SW SW Section 31-3s-8e, which recovered saturated Aux Vases sand from cores taken from 3,200 ft. to 3,239 ft., with the top of the Aux Vases at 3,221 ft. The well failed to make a producer in the Aux Vases sand or the McClosky lime and was abandoned at a total depth of 3,434 ft. in the St. Louis lime. Optimism concerning the prospects of the pool waned.

Completion of Kingwood Oil Co.'s No. 1 Tullis, 1½ miles to the northeast, in the C E½ NE NE Section 29-3s-8e, a light well, producing from both the McClosky lime and Aux Vases sand, revived interest. H. H. Weinert then completed No. 1 Miller, C S½ SW NE Section 29-3s-8e, in the Aux Vases sand topped at 3,210 ft. and the McClosky at 3,415-27 ft. and 3,431-38 ft. The well flowed 250 bbl. in 12 hours.

Other Successful Completions

Other successful completions in the area include Nations Oil Co.'s No. 1 Hammond, SW SW SE Section 31-3s-8e, which flowed 24 bbl. per hour from the McClosky lime topped at 3,358 ft.; Nations Oil Co.'s No. 2 Hammond, NW SW SE Section 31-3s-8e, a flowing well from the Aux Vases at 3,222 ft.; A. F. Anding's No. 1 W. McIntosh, SW NE SW Section 31-3s-8e, completed in the Aux Vases at 3,215-54 ft. for 125 bl. in 11 hours on the swab; Riley & Lacey's No. 1 F. Danby, SW SW NE Section 31-3s-8e, complete in the Aux Vases at 3,204-3,248 ft. for a flowing initial of 110 bbl. per day.

Baker and others' No. 1 McIntosh, SW NW SE Section 31-3s-8e, had dry Aux Vases at 3,226 ft. and was completed in the McClosky at 3,341-91 ft. for an initial of 230 bbl.; and H. H. Weinert's No. 1 Andrews-Miller, C S½ SW NW Section 29-3s-8e, completed in the Aux Vases at 3,221-67 ft. for 240 bbl. in 15 hours.

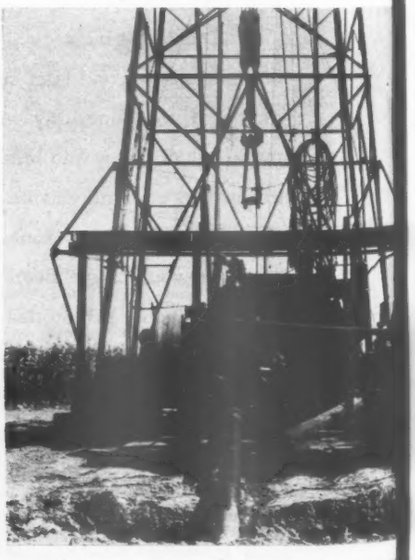
Four tests are drilling in the area at the present time with an additional well cased and ready to test the Aux Vases, rigging up is in progress on another test, one test has spudded and shut down, and there are five locations and derricks up. Possibility of a townsite boom is forecast by the staking of the William Barbee and others' No. 1 C. Gill, NW NW SW Section 20-3s-8e, in Mill Shoals townsite.

The extent of the structure is as yet unknown and will not be proven until more tests are drilled in the area. There is much discussion as to the structure in the area, some contending it is a shoreline condition and others predicting that further information will prove the existence of an anticline. There is a possibility of the Mill Shoals area connecting with the Springerton pool discovered late in August by P. F. Marrell's No. 1 Cox, NW NW NE Section 6-4s-8e, which was completed for an initial of 368 bbl. from the Aux Vases at 3,235-82 ft.; several additional wells have been completed in the Springerton pool and all have been good producers.

Structurally, the area is one of the lowest in the basin and only two fields in Illinois, Golden Gate and Barnhill, both in Wayne County, produce from Mississippian formations at greater depths. Geophysical prospecting in the area is somewhat handicapped and geologists indicate several things

(Continued on Page 32)

Right: Drilling at edge of cornfield in the Mill Shoals area. Below: Erection of a 1,200-bbl. refinery just south of town. Mill Shoals will take part of field's production. Right, below: Boilers on steam-driven rotary rig. Tanks and separator in background handle production from producing offset



International

Poland . .

Russia and Germany Seize Poland's Oil

PETROLEUM supplies to the extent of approximately 7,800 bbl. daily have been made unavailable to Germany since opening of hostilities, a volume representative of the imports from Mexico during the months immediately preceding the war. In the conquest of Poland and last week's division of the conquered territory with Russia, Germany acquired oil properties capable of producing approximately 3,230 bbl. per day.

These conclusions are based on the latest detailed information available from Poland and Mexico and are representative of June statistics from both sources.

The line of demarcation drawn through Poland by agreement between Germany and Russia gives Russia title to oil fields producing about 7,575 bbl. daily. The territory, designated now as Russian, contains the Drohobycz and Stanislawow (Boryslaw) fields in the Carpathian Mountains. The Jaslo field is on the German side of the dividing line. The demarcation also placed approximately 80 per cent of the refineries and processing capacity of what was formerly Poland under Russian domination. The petroleum production and refining facilities divided between Germany and Russia are relatively unimportant to both nations, but the fact that Reich troops were withdrawn from conquered territory containing the oil supplies passed over to Russia may have more far-reaching significance. This apparent abandonment of approximately 7,575 bbl. of daily oil production by Germany may indicate that its demand for petroleum has not reached the distressing stage forecast by some observers. On the other hand, it is likely that Germany will have access to any oil in excess of industrial requirements from the Russian-dominated portions of Poland for duration of hostilities. At the end of last week American companies, including Socony-Vacuum and Standard Oil Co. of New Jersey had not received any details as to the current position of their refining and distribution facilities, but in other industries, particularly agriculture, the Soviet partition of properties had started in the territory the Russian troops now occupy.

Germany imported an aggregate of 234,032 bbl. of crude oil and refined products from Mexico in June, according to a report from Mexico City reaching the U. S. Department of Commerce last week, amounting to a daily average of 7,801 bbl. Since the hostilities in Europe, however, Mexican petroleum shipments to Germany have been discontinued and there is little chance of reviving this traffic. In the first place, Germany owes Mexico approximately $6,000,000 in cash for oil previously obtained, a debt which few believe can or will be paid so long as war continues. Furthermore, three German tankers are tied up in Mexican waters and have been there since war was declared. Tankers owned by neutrals have persistently declined to accept cargoes for Baltic ports. Consequently, the termination of German oil imports from Mexico appears certain to continue for at least the duration of the war.

An Associated Press dispatch from Budapest says the entire Galician oil fields were occupied by the Russian Army, which found the oil fields in disorder. Retreating Polish soldiers were said to have dynamited the wells and destroyed pipe lines and superstructures, making the wells useless for at least a year.

Under the latest German-Rumanian agreement the quota of petrol to be supplied by Rumania to Germany remains the same but 5 per cent is added to supply the former Czechoslovakia region.

Russia . .

Great Britain Largest Purchaser This Year

PETROLEUM exports from Russia passing through Istanbul, which includes a large percentage of all shipments, totaled 430,717 metric tons (ton = 7 bbl.) for the first 7 months of this year. For the same period in 1938 the shipments totaled 394,211 metric tons. In July alone, the most recent month for which data are available, the shipments totaled 39,637 metric tons, compared to 61,931 tons for the same month in 1938. Great Britain was the largest customer for U.S.S.R. petroleum in July, absorbing 22,354 tons out of the total of 39,637.

Details of the July movement (in metric tons) follow:

	Fuel oil	Lube oil	Gasoline	Kerosene	Total
For order	7,042	....	....	....	7,042
England	....	6,872	13,510	1,972	22,354
Italy	7,170	....	....	....	7,170
Turkey	2,019	19	1,033	....	3,071

Fuel oil accounted for more than 50 per cent of Russia's exports during the first 7 months, totaling 245,141 tons. Exports by products during the first 7 months (in metric tons) follow:

Products—	1938	1939
Lube oils	64,326	41,392
Fuel oils	182,711	245,141
Kerosene	14,404	27,979
Gasoline	132,770	110,888
Benzol	.....	5,317
Total	394,211	430,717

France . .

Increasing the Use of Heating Oil Features

PEACE-TIME petroleum consumption in France during the first 6 months of 1939 reflected declines in the use of kerosene, gasoline and road oils, while increases were registered for naphtha, lubricating oils, gas oil, fuel oil, petroleum coke, and butane. There was a decided upward trend in the consumption of gas oil and fuel oil because of greater use of central heating units throughout the country.

Because of France's participation in the war and because the country is almost wholly dependent on imports, the consumption figures for the first half of the year indicate what may be expected so far as this customer of the United States is concerned.

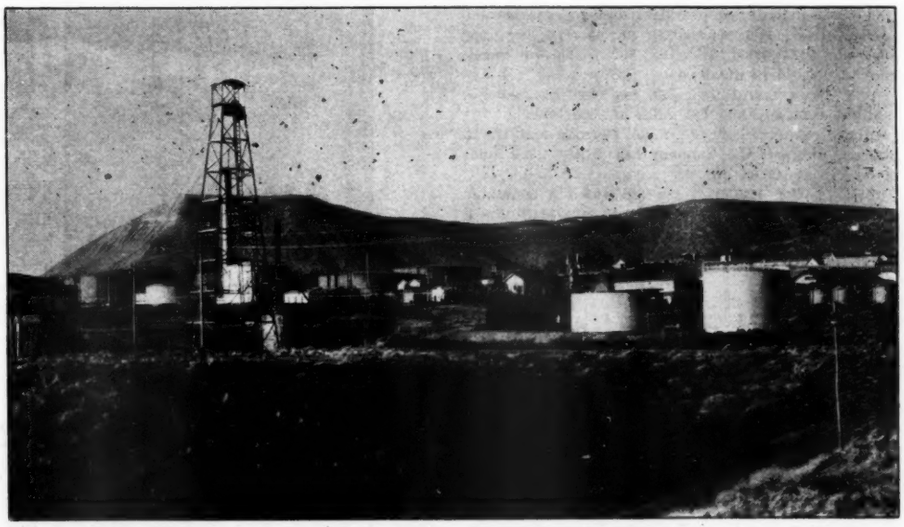
The totals for the first semester 1938 as compared with the same period this year are as follows:

FRENCH CONSUMPTION—FIRST SEMESTER

	1938 (bbl.)	1939 (bbl.)
Kerosene	485,812	415,125
Other refined petroleum products	20,165	23,235
White spirit	42,093	46,956
Gasoline	10,424,341	10,720,688
Lubricating oils	824,656	809,529
Gas oils	1,090,705	1,204,980
Fuel oils	4,717,587	5,308,709
Road oils	935,557	917,378
Butane	122,969	166,047
Miscellaneous	133,392	135,464

From these figures it will be noted that the totals for the first semester 1939, as compared with 1938, shows a decline in consumption of kerosene of 70,687 bbl., while lubricating oils, vaseline and paraffin oils, road oils and petroleum coke remained practically unchanged.

On the other hand, the consumption of gasoline increased 296,347 bbl.; fuel oils 591,122 bbl.; gas oils 114,275 bbl.; followed by smaller increases of other refined petroleum products, white spirit, butane, and paraffin.



Tanks in the Comodoro Rivadaira area of Argentine, S. A.

Texas Per-Well Production Declined During July

AUSTIN, Tex.—Per-well production in Texas oil fields dropped off to 15.36 bbl. per day during July 1939 as compared with 16.4 bbl. in July 1938, it was revealed in a report issued by the Railroad Commission last week. This decrease in per-well production was registered despite a daily average increase in production of 1,106 bbl. and was caused by the rapid growth in the number of producers. The report showed that in the 12-month interval between the two periods there was a total increase of 5,693 wells, of which 2,965 were pumping and 2,728 flowing. The total number of wells on production was shown to be 88,021.

The recapitulation indicated 360 more operators had been added to the list of those engaged in the oil industry, bringing the total to 5,882. Total production was 41,936,531 bbl. and the total allowable 43,363,502 bbl. during July 1939, as compared with production of 41,902,226 bbl. and an allowable of 42,968,725 bbl. in July of the previous year. A summary of the report follows:

	July 1, 1938	July 1, 1939	Change
Total producing wells	82,328	88,021	+5,693
Number flowing wells	33,151	35,879	+2,728
Number pumping wells	49,177	52,142	+2,965
Number of leases	16,018	16,846	+828
Number of operators	5,522	5,882	+360
Total allowable	42,968,725	43,363,502	+394,777
Daily average allowable (30-day month)	1,386,088	1,407,523	+21,444
Daily average allowable per well	16.8	15.99	—.81
Indicated production	41,902,226	41,936,531	+34,305
Daily average indicated production	1,351,685	1,352,791	+1,106
Daily average per well	16.4	15.36	—1.04
Lease storage	4,811,887	4,985,285	+173,398
Runs to pipe lines	41,397,123	41,185,823	—211,300
Tank-car movements	83,837	120,710	+36,873
Tank-wagon movements	199,625	255,524	+55,899
Used as fuel	15,669	8,306	—7,363
Miscellaneous uses	27,970	26,679	—1,291

Appeal in Rowan & Nichols Case Under Advisement

ATLANTA, Ga., Oct. 2.—The appeal of the State of Texas in the Rowan & Nichols case has been taken under advisement by the federal Circuit Court of Appeals here. Federal District Judge R. J. McMillan of San Antonio this summer sustained an attack by Rowan & Nichols of Fort Worth on the East Texas proration formula.

Assistant State Attorney General James Hart represented Texas before the Circuit Court. He argued that Judge McMillan went "beyond his jurisdiction." The top allowable production was not an issue in the the federal District Court, he claimed, yet Judge McMillan considered it in determining the reasonableness of the proration system.

Rowan & Nichols were represented by Dan Moody, former governor of Texas, who contended the old proration formula discriminated against better oil properties in the East Texas field and favored poorer properties.

Judges who heard today's arguments were Samuel H. Sidley of Atlanta, Rufus E. Foster of New Orleans and Edwin R. Holmes of Yazoo City, Miss.

Skelly Oil Co.'s Twentieth Anniversary Celebrated

The twentieth anniversary of the Skelly Oil Co. was celebrated at a special meeting of the Tulsa Chamber of Commerce September 28.

C. C. Herndon, vice president and general counsel, Skelly Oil Co., declared that in 20 years the company has paid $42,000,000 in taxes, $60,000,000 in wages, and $20,000,000 in dividends.

A. F. Winn, traffic manager, reminded his audience that the company has 700 miles of pipe lines.

Other speakers were W. P. Z. German and H. M. Stalcup, who said the company has drilled 1,700 miles of hole in search of oil.

Radio station KVOO, Tulsa, presented a 30-minute broadcast Sunday night, October 1, in which W. G. Skelly, president of Skelly Oil Co., was the featured speaker.

East Texas A.P.I. Chapter At Kilgore October 10

KILGORE, Tex.—The fall meeting of the East Texas chapter of the American Petroleum Institute will be held at the high school auditorium in Kilgore at 8 p.m. Tuesday, October 10.

An interesting program has been arranged consisting of a speaker furnished by the New York office of the Institute who will discuss "The Oil Industry and Its Relation to the Public." Woody Erwin, of the National Tank Co., will discuss "The Conservation of Crude Oil Gravity in the Field," followed by a discussion by J. R. D. Eddy, director of industrial education for State of Texas on new and additional courses offered as vocational training in East Texas. The A.P.I. dinner at the Kilgore Hotel will begin at 6:15 p.m.

Oklahoma Depletion Ruling

OKLAHOMA CITY, Okla.—The 20 per cent depletion reduction allowed payers of the state income tax on royalty from oil property is not applicable to cash bonus payments for oil leases, the state Supreme Court ruled October 3.

New Production Manager For Carter Oil Co.

Oscar C. Schorp of the producing department of Standard Oil Co. of New Jersey, in New York, has joined Carter Oil Co. in Tulsa as manager of the production department. President J. J. Conry announces Mr. Schorp will also serve as vice president and a director, and will assume the duties and responsibilities formerly held by F. W. Floyd, recently transferred to Venezuela.

O. C. SCHORP

Mr. Schorp entered the employ of Cia. Transcontinental de Petroleo, S. A., Tampico, Mexico, in 1920, leaving in 1925 to join the Andian National Corp. at Cartagena, Colombia. Upon completion of the Andian pipe line Mr. Schorp returned to Mexico in 1927 with Cia. Transcontinental. On January 1, 1929, he was transferred to Standard Oil Co. of Venezuela spending 5 years in the eastern and western fields. He was then transferred to the producing department in New York.

THE MARKETS*

CRUDE OIL: Increased prices for heavy crude resulted from the Humble Oil & Refining Co.'s revisions of its schedules in Gulf Coast, Refugio, Anahuac, Dickinson and Mirando fields in Texas. Sinclair Prairie Oil Marketing Co. met the Humble prices in the Gulf Coast and posted a flat price of $1.10 for East Texas. Humble advanced Talco, Texas, crude 10 cents and took Jim Wells County pools out of the Mirando district schedule, posting a flat price of $1.23 for Jim Wells crude. It was expected that all South Texas purchasers would post new prices and that all purchasers will return to the flat price of $1.10 in East Texas.

REFINERY: Seasonal decline in consumption and absence thus far of expected export business have injected a weaker tone into the market in some areas, though long-term outlook is regarded as favorable. Unusually warm weather has delayed demand for heating oils, but strong market is looked for. Lubricating oils and wax are buoyant, with higher prices indicated.

TANK WAGON AND POSTED DEALER: Minor changes, in scattered areas, reported. Expectation of general advance in tank-wagon prices is diminishing. Removal of 2-cent city tax in New Orleans has ended that city's distinction of having the heaviest-taxed gasoline in the nation.

FINANCIAL: Oils joined the other issues in the week-end market rally, but they closed under the preceding week's level. Atlantic Refining touched a new high for the year. Average of 30 representative stocks for week ending September 30: High, 29.78; low, 28.23; close, 29.11. Week ending September 23: High, 29.97; low, 27.92; close, 29.42.

*Detailed information in market section.

DEATHS

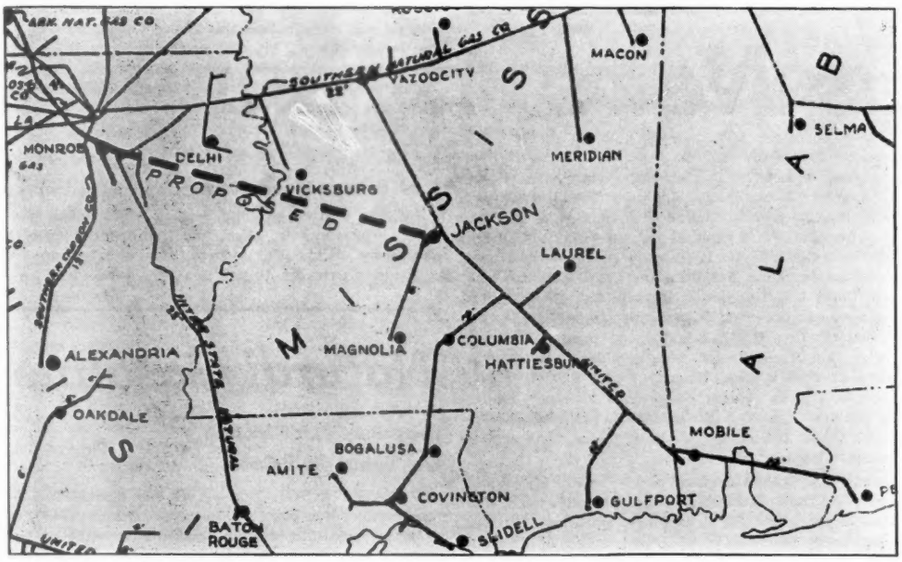
GEORGE W. PICKERING, who had served the Cleveland Tractor Co. for almost 20 years in export and domestic fields; at one time having been manager of the Canadian office and for the past 15 years assistant sales manager, died September 16.

JAMES NOLAN, 90, pioneer drilling contractor, died September 28 in Allegany, N. Y. He began work as a driller in the Bradford field in 1875, later operating tools in Butler County, Pennsylvania, and in West Virginia and southeastern Ohio. He leaves two sons and a daughter. He is an uncle of John B. Sheehan, of the Sheehan Pipe Line Construction Co., of Tulsa.

ROBERT R. DICKSON, 50, vice president and director of Benedum-Trees Oil Co., died in Pittsburgh, Pa., September 27.

FRANCIS I. FALLON, 49, formerly counsel for the Tide Water Oil Co., died September 27 at Scarsdale, N. Y.

W. W. KANEY, who helped develop oil fields from Kansas to Bohemia, died at Chanute, Kans., October 1. He moved to Kansas in 1895 to drill one of the first wells in the Mid-Continent following early oil experience in Pennsylvania and in 1892 and 1893 went to Bohemia to help develop fields in an area which later became a part of Czechoslovakia.



Proposed gas line from Jackson, Miss., to the Monroe field, Louisiana

United Gas Company to Lay 175-Mile Line

By NEIL WILLIAMS

HOUSTON, Tex., Oct. 3.—United Gas Pipe Line Co. is starting work this week laying a total of more than 175 miles of gas line, including 125 miles of 18-in. on a trunk line from Monroe, La., to Jackson, Miss., with the remainder consisting of shorter sections of gathering and connecting lines ranging in size from 20-in. down to 4-in. The Monroe-Jackson trunk, which follows an almost direct route between those two points, crossing the Mississippi River at Vicksburg, is being laid to supply additional gas for the company's present Jackson-Pensacola-Mobile system serving parts of southeastern Louisiana, southern Mississippi and southern Alabama and Florida. At Monroe a connection will be made with Arkansas Natural Gas Co.'s trunk line from northwestern Louisiana, which will transport gas for the United Gas Pipe Line Co. from the Sligo field and other fields around Shreveport. Gathering and connecting lines are being laid from these fields to the Arkansas Natural trunk line. Brown & Root have the general contract for the project.

Confronted with the probability of early exhaustion of adequate reserves in the Jackson, Miss., gas field, companies drawing on that field are finding it necessary to seek additional sources of supply from other fields. Although production is meeting current demands, prospects are that available gas will be insufficient when the remaining wells have to be pulled on more heavily during the winter.

The Jackson field has one of the most perfect water drives so far known; and with the withdrawal of gas, the water has been coming in steadily, resulting in abandonment of the wells in rapid succession. Only 40 wells out of a total of 144 completed are on production. Of these, 20 are making substantial volumes of water with indications the next several months will see the list of dead and abandoned wells materially swelled. Water also is beginning to show up in some of the remaining 20 wells.

Practically all the gas for United's system has been supplied from Jackson field. This system extends northward to a connection with Southern Natural Gas Co.'s main line from the Monroe field, northeastern Louisiana, to Birmingham, Ala., and Atlanta, Ga., but that line does not have sufficient capacity to supply the United Gas Pipe Line Co.'s system with sufficient additional gas to meet its needs.

To obtain additional gas, United Gas Pipe Line Co. considered various proposals. One was to lay an 18-in. line from Jackson to Monroe, La., approximately 120 miles. Another was to make arrangements with the Southern Natural Gas Co. to provide sufficient additional capacity on its line between Monroe and the point at which the United Line ties in and sell the latter the needed gas.

Sufficient gas probably could not be obtained from the Monroe field, due to the decline of pressures and depletion of reserves there; but from that field there are pipe lines to other gas fields in North Louisiana from which the gas can be obtained.

The Jackson field, located on the east side and partly within the city of Jackson, on the line of Rankin and Hinds counties, was opened in February, 1930. In the 9½ years it has produced more than 86,000,000,000 cu. ft., a substantial part of which has been taken by the United Gas Co. Gas was first turned into the distribution system of the city of Jackson in October 1930. First market for the gas outside of Jackson was opened in January 1931 when the United Gas system started taking gas for its new pipe-line system.

Most of the development took place prior to the close of 1934, when the field reached its peak in number of wells on production; production at that time coming from 113 wells. With the productive area defined, active drilling was practically concluded by 1937. Additional wells drilled between 1934 and the end of the drilling program in 1937 were insufficient to offset abandonments; and at that time the number of wells on production had dropped to 90. Since, the rate of abandonments has been gaining momentum with 50 wells going off production within less than 2 years. Productive area is approximately 7,500 acres.

Except for three wells on the southeast edge which have produced small quantities of heavy oil at irregular intervals, production has been entirely dry gas. Production comes from a very porous zone at the top of the Selma chalk found at 2,100-2,200 ft., subsea depth (2,400-2,500 ft. actual depth). Initial production of the wells has ranged up to more than 50,000,000 cu. ft. daily. However, water has closely underlain the gas zone, and heavy withdrawals have been quick to bring in water. Depletion has been hastened by a number of major blowouts.

Some gas production has been obtained at Amory in the northeastern corner of the state. Within recent years the state has been the scene of an intensive geophysical exploration and leasing play, and now is regarded by many oil men as offering extensive potentialities for exploitation and development.

Illinois Conservation Bill Finally Agreed Upon

CENTRALIA, Ill., Oct. 3.—An oil conservation measure for Illinois has been agreed upon by a committee representing the several groups of operators active in basin fields, it was reported here today. It was believed the bill may be introduced at a special session of the legislature, expected to be called by Governor Horner within the next few days.

Details of the proposed bill were not made public, but it is understood it contains provisions for minimum allowables, spacing of wells and common purchasing. Exact provisions were to be announced after approval of the measure by the three Illinois oil associations whose representatives have been working on it.

A committee composed of representatives of the Independent Oil Producers Association of Illinois, the Petroleum Association of Illinois, the Illinois-Indiana Petroleum Association and of major oil companies has been working on the conservation measure for several weeks. Each group is said to have made concessions so that a measure could be drafted on which all could agree.

Petitions asking Governor Horner to include oil conservation in his call for a special session of the legislature have been signed by a majority of oil producers in the state and were to be submitted to the chief executive as soon as a conservation bill had been agreed upon. The governor, who was expected to call the session to consider old-age pensions, had said he would include oil conservation if shown that a majority of the operators had agreed upon such action.

Natural-Gas News

Winter Gas Rate Reduced To Galveston Users

GALVESTON, Tex. — Domestic gas rates in Galveston are to be reduced 10 cents per 1,000 cu. ft. during the winter, it was announced by Texas Cities Gas Co.

The reduction, almost 15 per cent of the present rate, is the result of an agreement between the company and the city commissioners.

The new rates, exclusive of service charge, will be 65 cents per 1,000 cu. ft. for the first 15,000 cu. ft. and 55 cents per 1.000 cu. ft. for all in excess of 15,000 cu. ft.

A.G.A. Industrial Gas Section

John H. Warden, Oklahoma Natural Gas Co., is chairman of the program committee for the industrial gas section of the American Gas Association annual meeting in New York, October 9-12. Franklin T. Rainey, Ohio Fuel Gas Co., vice chairman of the section, will preside at the Tuesday afternoon, October 10, session.

Pacific Gas Association To Coronado in 1940

Announcement was made by Pres.-Elect A. E. Holloway, of the Pacific Gas Association, that Coronado had been chosen as the place for the 1940 convention, but no date has yet been set. Also announced was the acceptance of the invitation of the Canadian Gas Association to join in its annual convention at Jasper National Park, British Columbia, on July 3-5, 1940. This meeting will take the place of the usual Northwest Conference.

The Addison B. Day Medal of Honor was awarded to James F. Pollard, Seattle Gas Co., for his instrumentality in bringing about the affiliation between the American Gas Association and the Pacific Gas Association, and for his leadership in developing a national gas advertising campaign. Gold medals were awarded to B. M. Laulhere and C. F. Briscoe, Southern California Gas Co., for their paper entitled "Partial Dehydration of High-Pressure Natural Gas."

New officers and directors were elected for the fiscal year beginning November 1: President, A. E. Holloway, vice president in charge of sales, San Diego Consolidated Gas & Electric Co.; vice president, R. A. Hornby, vice president, Pacific Lighting Corp.; treasurer, D. G. Martin, general auditor, Pacific Gas & Electric Co. Directors: F. M. Banks, vice president, Southern California Gas Co.; R. E. Easton, president and general manager, Santa Maria Gas Co.; H. L. Farrar, president, Coast Counties Gas & Electric Co.; R. S. Fuller, engineer, gas construction and operations, Pacific Gas & Electric Co.; R. G. Logue, vice president, Ward Heater Co.; M. A. Pooler, vice president and general manager, Tucson Gas, Electric Light & Power Co.; Clyde H. Potter, general commercial manager, Southern Counties Gas Co.; W. R. Smith, president, Continental Water Heater Co.; J. J. Winn, Jr., commercial manager, Portland Gas & Coke Co.

Harry J. Smith, chairman of the technical section, announced the following appointments: Chairman, distribution committee, C. P. DeJonge, San Diego Consolidated Gas & Electric Co.; chairman, transmission committee, Grove Lawrence, Southern California Gas Co.; chairman, utilization committee, John Mueller, Payne Furnace & Supply Co.

Texas Court Upholds Rate Cut by Commission

AUSTIN, Tex.—Judge Ralph Yarborough in District Court sustained a Railroad Commission order reducing a gate-rate charge for numerous towns on pipe lines of Public Service Corp. of Texas from 40 cents to 27 cents. The company also serves several Oklahoma communities.

Burner-tip rates in the communities affected had ranged from 60 to 65 cents. With the gate-rate reduction, Olin Culberson, head of the gas utilities division of the commission, estimated the burner-tip rates would be between 50 and 55 cents a thousand.

Judge Yarborough cited the ruling of the Court of Civil Appeals in the recent gate-rate contest between the state and Lone Star Gas Co. as authority for his decision, which disregards a jury finding.

Included in Judge Yarborough's ruling was a finding that 2 cents a thousand cubic feet was ample to cover the cost of gas purchased at the well head in the Panhandle field.

The ruling upholds the state commission allocation of pipe-line costs between Texas and Oklahoma users. On this point Judge Yarborough said: "Law and justice do not require that the Texas consumers pay all the burden for a pipe line used primarily to convey gas to another state for use in that state."

Communities for which the 27-cent gate rate is ordered are Canadian, Booker, Perryton, Waka, Farnsworth, Glazier, and Higgins.

Gas Service Bond Issue

JACKSON, Miss.—A bond issue of $360,000 has been voted in Pascagoula, Miss., for the installation of a natural-gas distributing system. Gas will be supplied at the city gates by United Gas Pipe Line Co.

Executive board of the American Gas Association, which will meet in annual convention in New York City, October 9-10. Seated: Vice President T. J. Strickler, T. R. Weymouth, George S. Hawley, C. E. Paige, Managing Director Alexander Forward, President Conrad N. Lauer, Vice President Walter C. Beckjord, George F. Mitchell, N. T. Sellman, Marcy L. Sperry, L. B. Eichengreen, Davis M. DeBard, F. M. Goodwin, D. W. Harris, Merrill N. Davis. Standing: Counsel Randall J. LeBoeuf, Secretary Kurwin R. Boyes, Otto Snyder, Treasurer E. R. Acher, H. A. Ehrmann, C. A. Tattersall, Frank H. Trembly, Jr.

Natural Gasoline

Recycling Plant Started On Texas Gulf Coast

CORPUS CHRISTI, Tex.—Work has started for the construction of a plant costing approximately $400,000 to be operated in connection with the recycling project of L. M. Lockhart, San Antonio, in the Agua Dulce field. The plant will operate on 25,000,000 cu. ft. of gas; 25,000 gal. of natural gasoline and motor fuel will be recovered from the gas. The plant is of the high-pressure absorption type with refrigerating equipment. Stripped gas will be returned to the formation at 2,300 lb. pressure. Petroleum Engineering, Inc., Tulsa, has the contract for constructing the plant.

Sinclair Prairie Builds Plant At East White Point Field

Contracts have been let and work is under way for the construction of Sinclair Prairie Oil Co.'s 7,500,000-cu. ft. absorption plant in the East White Point field, San Patricio County, Texas.

Recycling Project Considered For Refugio County, Texas

Coronado Corp. is considering a project in the La Rosa field, Refugio County, Texas, which involves consolidating the operation of wells of a number of properties and the construction of a plant for condensate recovery and recycling.

Petroleum Accountants Elect Officers and Directors

The Petroleum Accountants Society of Tulsa September 28 elected the following officers for the ensuing year, and three directors for a 3-year term: R. B. Hanson, president; B. E. Witchell, first vice president; L. E. Tustison, second vice president; and Norman C. Cross, secretary and treasurer. The new directors were R. B. Hanson, B. E. Witchell, and Norman C. Cross. There are nine on the board and the six holding over are E. B. Branson, L. P. Harrington, A. W. John, E. H. Loosley, L. E. Tustison, and W. H. Massey.

The society has made rapid growth, during the past 2 years, under the leadership of J. M. Flaherty, as president, and the other officers and directors. Meetings are held each month from September to May, where speakers present subjects of interest to petroleum accountants.

Clarel B. Mapes, general secretary of the Mid-Continent Oil and Gas Association, was the guest speaker at the last meeting on federal legislation affecting the oil industry.

Motor Vehicle Sales Are Up 43 Per Cent

Retail sales of motor vehicles gained 43 per cent over the corresponding period of last year during the 8 months ending with August, according to the Automobile Manufacturers Association. Total sales of 2,177,952 units included 1,816,179 passenger cars and 361,773 trucks.

Refinery Expansion

Pacific States Oil Co. Has Been Reorganized

LOS ANGELES, Calif.—Reorganization of Pacific States Oil & Terminals Co. and a change in name to Pacific States Oil Co. was announced. R. D. Mathews, until recently executive vice president and director of Union Oil Co. of California, has been elected president. H. H. Whitesel will continue at vice president.

Pacific States Oil Co. owns a refinery located on 75 acres of land, owned in fee, at Wilmington, on which there is about 850,000 bbl. of steel tankage with a wharf and delivery facilities for ocean-going vessels. The refinery will be improved and an up-to-date cracking plant installed. The company also owns in fee sites for terminals at San Francisco, Portland and Seattle.

Gladewater Refinery Resumes Operations

GLADEWATER, Tex.—Reopening of the recently remodeled Texas Oil Products refinery cracking plant and gasoline plant in Gladewater by the Gladewater Refining Co. occurred the past week.

The Gladewater Refining Co. is a new firm managed by H. F. Richardson. It had been closed since August 16. Improvements costing approximately $5,000 were recently completed. The plant handles straight-run gasoline, kerosene, gas oil and fuel oil.

Shamrock to Dismantle Refinery at Lefors

AMARILLO, Tex.—Shamrock Oil & Gas Corp.'s 1,500-bbl. skimming plant near Lefors in Gray County, Texas, will be shut down and dismantled, company officials announced last week. The decision was arrived at when it was found too expensive to ship topped crude from the Lefors plant to its 3,000-bbl. combination plant at McKee in Moore County. The refining activities of the company will be concentrated at the McKee refinery, which was modernized some 2 years ago by the installation of a catalytic polymerization unit. Pipe-line connections in the field to the plant, which have been furnishing about 1,500 bbl. daily, will be taken over by the Texas Co. and Humble Oil & Refining Co.

$200,000 to Be Spent on New Mississippi Plant

YAZOO CITY, Miss., Oct. 3.—Yazoo Refining Co., Inc., a newly organized company headed by W. C. Kruger, president, is starting construction this week for a 2,000-bbl. capacity skimming plant at a recently acquired 50-acre site, 3 miles south of here on the Yazoo and Mississippi Valley Railroad. Crude for the plant is expected to be supplied from the Tinsley field, about 6 miles southwest, which was opened several weeks ago by Union Producing Co., of Houston. The plant will cost an estimated $200,000.

James B. Berry Sons Co. Wins Patent Decision

PHILADELPHIA, Pa.—Reversing two of its own decisions, the federal Circuit Court of Appeals declared invalid a patent owned by the Atlantic Refining Co. for extraction of gasoline from crude.

The decision for James B. Berry Sons Co. of Oil City, a subsidiary of the Quaker State Oil Refining Co., upheld a decision by the federal Circuit Court in Pittsburgh. The Berry firm had been accused by the Atlantic company of infringing on its patents, but Judge Robert H. Gibson, of Pittsburgh, held the patent invalid.

Cracking Unit to Be Added To Illinois Refinery

Construction of a cracking plant will start this month at the refinery of Cascade Refining Co., in the northern part of the Lake Centralia-Salem field, Illinois.

Demand for Domestic Fuel Oil Increased on Pacific Coast

In a report on the situation in Pacific Coast territory, Edward T. Knudsen, Petroleum Economics Division, U. S. Bureau of Mines, says that probably the most interesting development revealed by the August California petroleum statistics is the manner in which domestic fuel-oil demand increased. Fuel-oil demand in the Pacific Coast territory started to increase last May, about the time there is normally a seasonal decline, and has increased each month since, with the exception of July. During August domestic demand reached the relatively high level of 220,000 bbl. daily (compared to 177,000 bbl. daily in August, 1938) and as shipments also increased 18,000 bbl. daily to 47,000 bbl. daily, it was necessary to draw on stocks to the extent of 1,494,000 bbl., or 48,000 bbl. daily. A total of 2,413,000 bbl. were drawn from all stocks in Pacific Coast territory in August. Since the first of the year total stocks in the territory have been reduced 815,000 bbl., while during the same period in 1938, 22,962,000 bbl. were added to storage.

Work Has Started for New Kansas Refinery

Foundations have been poured for the construction of Consumers Cooperative Association's refinery at Phillipsburg, Kans. Office buildings have been completed and dikes have been built for storage tanks. The plant is to have a capacity of 3,000 bbl. The headquarters of the association is at North Kansas City, Mo.

Pipe-Line Activity

Construction Work Begun On Champlin Line

SIOUX CITY, Iowa.—Champlin Refining Co. of Enid, Okla., is starting construction of its 260-mile 6-in. line from Superior, Neb., to Rock Rapids, Iowa, according to an announcement by Bayard Payne, general superintendent. The line will enter Iowa near Sioux City. It will carry refined gasoline, kerosene and tractor fuels from Champlin's terminal at Superior, Neb., to a tank farm being constructed at Rock Rapids, Iowa. Mr. Payne said the entire line would be completed in 60 days. Champlin already has a line from Enid, Okla., to Superior.

Salem-to-Stoy Line

SALEM, Ill.—Construction work on Standard Oil Co. of Ohio's 10-in. line from Salem, Ill., to Stoy, terminal of the old Tide Water system line which Standard recently purchased, now is being done in Richland County. Gathering systems will tie in at Noble and other points. Standard will transfer to this line the few thousand barrels a day it has been putting through the line of Wabash Pipe Line Co. (Pure Oil Co.).

Consolidated Gas Completes Panhandle Booster Station

AMARILLO, Tex.—Construction of Consolidated Gas Utilities Corp.'s new booster station at Twitty, 7 miles north of Shamrock, Tex., has been completed. The station was completed at a cost of $100,000 and will serve the company's large natural-gas line running into Oklahoma and Kansas.

Laying sections of 24-in. pipe up to 118 ft. long on the Michigan Gas Transmission Corp. pipe line in southwestern Indiana

Outlet Lack Slows Mill Shoals

(Continued from Page 26)

may have affected the structure and caused the differences in depth at which the pays are obtained. The Chester formations vary widely in porosity, permeability, shale content and other characteristics and wells often are failures in what should be productive territory. There is thus a possibility that production may be obtained beyond the dry hole drilled by Shell Oil Co., Inc.

Most of the wells in the field are equipped with 5½-in. casing, set either on the top of the Aux Vases or through the Aux Vases into the McClosky. In a few cases removable pipe sections have been set opposite a productive Aux Vases zone. The casing in some wells has been perforated to obtain production from the Aux Vases after running a casing string to the McClosky.

Both 2½ and 2-in. tubing, upset or plain, have been used, but operators are now favoring the smaller size as prolonging the flowing life of the well. The Aux Vases discovery well is equipped with 2½-in. upset tubing with a packer located approximately 250 ft. off bottom. This well is still flowing, making 10 bbl. per hour through a 23/64-in. choke with 65 lb. back pressure on the tubing.

Unfortunately there is little free gas associated with the production of the oil and the wells have to depend on the rock pressure for their flowing energy. The McClosky pay contains more gas, but if the wells are not handled carefully they soon have to go on the pump. By proper flowing rates and careful husbanding of the energy, operators hope to prolong the flowing life of the field and thus postpone the installation of pumping equipment where possible. Several of the wells have become pumpers.

The crude produced at Mill Shoals is similar to other Illinois fields, that from the McClosky having a gravity of 38.5°, corrected, and that from the Aux Vases having 40.8° at 82° F. There has been no water associated with the production in the central part of the field, with one exception. Kingwood Oil Co.'s No. 1 Tullis, an outpost well, swabbed as much water as it did oil, but operators corrected this before completion and on its initial test the well made no water.

The drilling of the hole and the completion of the wells has been by the rotary method. As this is nearly the deepest drilling in Illinois, only larger rigs are being used in the area. Skillet Fork, a stream that meanders widely over the southern part of the state, provides ample water for boilers and several of the wells have been drilled with a steam rig. However, most of the work has been done with mechanical rotary rigs, either gasoline or diesel-powered.

Canyon Pipe Line Co. has a line to the field but it is buying only from Anding & Nation at present. H. H. Weinert is shipping his oil out in trucks and until the H. S. & B. Refining Co.'s plant is completed, other operators will probably have to resort to this method of getting rid of their production. The refinery, located just south of Mill Shoals, is scheduled for completion on October 1. W. R. Hull, H. H. Stouffer and W. H. Boughter, all of Decatur, Ill., are the owners.

The Fairfield Refining Corp.'s plant at Merriam recently went on stream but adjustments are still being made. When it gets into full and continuous operation it will probably absorb some of the production from the Mill Shoals field along with that obtained from the Barnhill pool. R. B. Knight is president of the Fairfield Refining Corp., R. M. McNeely and Jack Schurmann are vice presidents and A. H. Eisler is secretary-treasurer.

Loco Hills Field, New Mexico

(Continued from Page 23)

at the rate of 60 to 70 ft. per mile, with wells on the west topping the pay at around 2,600 ft. and wells on the east at around 2,800 ft. An abbreviated log of the section encountered in the discovery well on the east side follows:

	Depth (ft.)
Drift sand and calachie	0- 20
Gyp and red beds	20- 425
Top of salt section	425
Base of salt section	1,114
Anhydrite and shale	1,114-1,208
Anhydrite, shale and red beds	1,208-1,718
Gray lime, lime and anhydrite	1,718-2,047
Brown shale, anhydrite and lime	2,047-2,290
Top of red sand	2,290
Red sand (show of gas)	2,290-2,320
Anhydrite, brown lime, gray lime	2,320-5,525
Anhydrite, brown shale, sandy lime	2,525-2,631
Top of Big lime	2,631
Lime	2,631-2,718
Brown lime	2,718-2,727
Lime	2,727-2,751
Gray lime	2,751-2,771
Lime	2,771-2,783
Corrected depth (3 ft. in pay)	2,809
Top of pay	2,806
Pay sand	2,806-2,832
Hard white lime	2,832-2,874

Continental Oil Co. and S. P. Yates' No. 1 Travis in SE SE SE Section 3-18-29 encountered base of the salt section at 890 ft., the red sand at 2,130 ft., and the Artesia pay at 2,606-2,638 ft. Correction for elevation would place No. 1 Travis about 130 ft. higher than No. 1 Yates, which checks the regional dip. No. 1 Travis was completed early in September for an initial potential of 46 bbl. of oil daily and 172 bbl. of water, pumping. This is the first well in the area to show any appreciable water. Since no signs of water were shown in the producers completed ½ mile to the east and 1 mile to the west, it is believed the water in No. 1 Travis is a local condition.

The pay section encountered in wells completed to date varies from about 30 ft. for producers well within the field to about 12 ft. for wells further to the north and west. Allen, Fair & Pope's No. 4-A State, in SE SW NW Section 36-17-29, missed the Loco Hills pay entirely, and is being completed as a producer in a lime section at 3,252 ft.

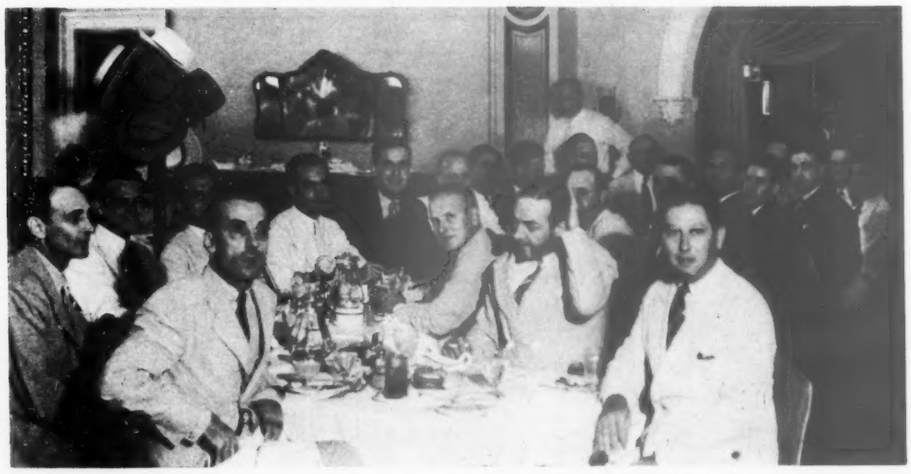
Practically all drilling in the field has been done with spudders and standard machines. One rotary was operating for a while, but it has been moved out, as all water for drilling has to be hauled into the field by trucks. On an average, from 30 to 40 days are required for completing a well in the tanks, at a cost varying from $12,000 to $14,000. From 25 to 30 days are required for drilling to the pay, usually, and the remainder of the time is spent in cleaning out after shot. General practice calls for shooting the wells with 125 to 250 gal. of nitroglycerin, using 2 to 2½ yards of gravel tamp.

Drilling practices and casing program usually followed are to set 375 to 450 ft. of 8-in casing on top of the salt section and cement with 50 sacks. Hole is then carried to about 100 ft. above the expected top of the pay, and a 7-in. oil string cemented with 100 sacks, placing the cement with 6 tons of mud as required by government rules. The well is then drilled in and shot, and, after cleaning out, 2-in. tubing is run.

Approximately 75 per cent of the acreage contained in Loco Hills is government land; and of the remaining 25 per cent most of it is owned by the state. Leases, though, are mostly fairly small in the field proper, but in the surrounding area a few 640's or larger leases exist.

Until about October 1 all crude had to be trucked from the field, either to a gathering station in the Grayburg-Jackson area, or to Artesia, some 17 miles west, where there are four refineries operating at present. Texas-New Mexico Pipe Line Co., however, recently completed a gathering system in the field and laid a 4-in. line to its Grayburg station where it is taken by way of Hobbs and Jal to the Gulf Coast. At present the 30-odd producers have an allowable of 65 bbl. daily, the oil being practically sweet, with only a trace of sulfur.

OIL SCOUTS WATCHING LOUISIANA



NEW ORLEANS, La.—An indication of the eastward trend of oil development in the Gulf Coast area is the growing number of oil scouts now making their headquarters in New Orleans. The scouts have inaugurated weekly luncheon meetings at which the following 23 scouts and others interested in oil were present: M. Q. Petersen, Petersen Petroleum Corp.; James T. Grafton, C. A. Lomax, A. S. Love, Gulf Oil Corp.; R. J. Campbell, Lisbon-Iberia Oil Co.; H. C. Petersen, Freeport Sulphur Co.; W. K. Rainbolt, Sun Oil Co.; Gayle Griffin, Superior Oil Co.; Paul W. Mackey, Texas Co.; Joseph C. Hemphill, Magnolia Petroleum Co.; Fred O. Mills, O. P. Kiker, Jr., Joseph G. Heyck, Edward F. Stauss, Jr., Humble Oil & Refining Co.; W. F. Smith, Cecil W. Mann, William Helis Oil Co.; Lawrence W. Hewitt, Midstates Oil Corp.; Jack Hayes, California Co.; J. E. Lytle, Union Producing Co.; H. L. Carnahan, Peter F. Dunn, independents; Cyril K. Moresi, Louisiana state geologist, and Donald Goodwill, Jr., Louisiana Department of Conservation.

New Discovery in Burkburnett Starts Redrilling Activity

By R. MARNE SANFORD

FORT WORTH, Tex., Oct. 3. — Practically unnoticed, and entirely unhearlded as a new oil field discovery, is the Warren and Reilly area, 4½ miles southwest of the town of Burkburnett, in northern Wichita County, North Texas. Significant is the fact that this new and rapidly developing area is in the old and, for several years, classified as semidepleted Burkburnett district; being specifically located in the southeast part of the old Clare field just west of the Burkburnett field proper. Discovered only a few months ago, the area now embraces some 25 wells and has started a reexploration and redrilling campaign in the Burkburnett and the Clara fields and other old shallow fields in the northern part of Wichita County.

Operators in the district are of opinion that, due to the great boom which the Burkburnett area caused some 20 years ago when in its development stages, thorough testing of all possible producing horizons and careful drilling practices were disregarded in the wild rush to tap the prolific Burkburnett sand which sent thousands of barrels of oil daily over the top of the derrick. The old-time operators in the field merely drilled their wells to the projected horizon and completely ignored a mere showing of oil in a shallow sand. When the well blew in over the derrick there was, of course, no reason whatsoever, in drilling deeper in search of another pay section, or in testing the shows higher up in the hole.

Stripper Producers' Profit

It is the stripper producers and the secondary recovery operators that are profiting by the somewhat careless enthusiasm of the early oil men in this historic old Burkburnett field. Development in the Warren and Reilly area, which centers at the corner of the Louis Talleferro Survey, Abstract 541 and the D.L.&C. Co. Survey, Abstract 614, dates back to 1923 when Magnolia Petroleum Co. exploited the shallow pays on the E. Reilly, the Schmoker, the Powell, and the George leases. For the past few years this entire area has been practically devoid of drilling.

Revival of activity began several months ago when the Dudley-Fisher & Kahn interests, Wichita Falls, brought in their No. 1 F. Warren, in the Talleferro Survey, slightly east of the Magnolia Petroleum Co.'s old wells on the E. Reilly tract. No. 1 Warren was completed for an initial production of 150 bbl. of oil daily from about 20 ft. of sand drilled to a total depth of 1,362 ft.

After a quiet, yet continuous, program of drilling by the discovery operators, Monty Staniforth, also of Wichita Falls, started his No. 1 E. Reilly as a north offset to the discovery well. This was completed as a 29-bbl. well from a sand at 800 ft. There was then a 1,350-ft. sand and an 800-ft. sand open to development; and, shortly following his first well, Mr. Staniforth completed his second well as a 30-bbl. producer from the 800-ft. sand. No. 3 Reilly was carried deeper and completed as a 200-bbl. well from the initially discovered 1,350-ft. level.

Production in the area is found from about 20 ft. of sand which is encountered anywhere from 1,335 to 1,386 ft. It is a typical lenticular-sand field and is expected, when entirely drilled up, to cover no great area. The field has experienced no great expansion and at present embraces little more than 80 proven acres. Its true significance lies in its inauguration of the reexploration and redrilling program of the entire area. Tests have been started at various points; some even 5 to 6 miles from the Warren and Reilly area. The discovery well in the Warren and Reilly area was drilled, as all other wells in the area have been, with rotary equipment. However, most of the far-reaching outpost and exploratory tests are being drilled with cable tools or spudders.

Deep Tests Drilled

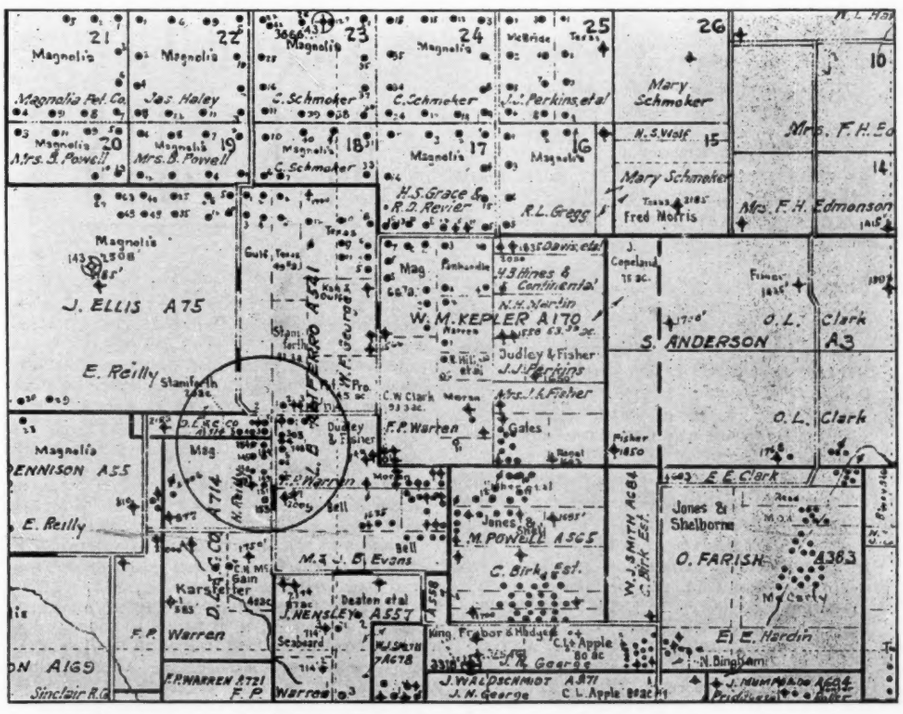
Several comparatively deep tests were drilled with rotary equipment in this general area during the past 10 years and all were dry and abandoned. Magnolia Petroleum Co. drilled a 3,666-ft. dry hole about 2½ miles north of the Warren and Reilly area, and another 2,508-ft. dry hole about a mile northwest of the area; both being in the eastern part of the old Clara field. On the western edge of the Clara field, Fresno Oil Co. has a 2,836-ft. dry hole on the Ramming lease in the H.T.&B. Survey, Abstract 124. About 1½ miles southeast of this area, King Oil Co. and Frabor-Hodges Drilling Co. has a 3,318-ft. failure on the J. N. George lease. Few other tests in this old Burkburnett district have been drilled deeper than 2,200 ft.; however, the general opinion is that the remaining undiscovered oil is at a shallow depth.

Some of the shallow exploratory tests drilled in the past few months have been dry and abandoned; however, the majority have found at least some production from stray sands ranging in depth from 600 to 2,000 ft. No areas comparable to the 25-well Warren and Reilly pool have yet been discovered, but the activity in the entire old Clara, Burkburnett, and Northwest fields continues.

Locations staked throughout this old and semidepleted district of northern Wichita County are not classified as rank wildcats, therefore receiving little attention. However, the results of the coming few months of drilling will bear watching as geologists and informed operators believe several prolific shallow oil pools will be found scattered through the old fields.

Fuel Consumption Per Vehicle Shows Year-to-Year Advance

Average annual consumption of motor fuel for all cars and trucks in 1938, the Automobile Manufacturers Association reports, was 661 gal., costing $128.96. Of the total cost, $35.96, or 38.7 per cent was added by direct taxation, the average cost of the fuel itself being $93. Fuel consumption per vehicle has risen steadily since 1920, and last year advanced almost 13 per cent over 1937.



Northern part of Wichita County, Texas. The Warren and Reilly pool is shown in the circle

PROGRAMS AND MEETINGS

American Welding Society Election of Officers

As a result of the recent ballot for officers for 1939-40, the following nominees will be formally inducted at the annual meeting of the American Welding Society in October:

President, G. T. Horton; first vice president, T. C. Smith; second vice president, L. S. Moisseiff; district vice presidents: New York and New England, W. F. Hess; middle eastern, L. C. Bibber; middle western, K. L. Hansen; southern, A. J. Moses; Pacific Coast, L. W. Delhi. Directors-at-large, E. V. David, J. D. Gordon, G. F. Jenks, and H. S. Smith.

National Safety Council Petroleum Section

The tentative program before the Petroleum Section of the National Safety Congress and Exposition at the Ambassador Hotel, Atlantic City, N. J., October 16 to 20 follows:

Tuesday, October 17

2:00 Annual reports:

(*a*) Sectional activities—J. H. Brown, general chairman, Petroleum Section, and fire protection engineer Tide Water Associated Oil Co., New York.

(*b*) For pipe lines—Charles A. Miller, vice chairman, Petroleum Section, and assistant to manager, Texas Co., Houston, Tex.

(*c*) For production—C. J. Nobmann, vice chairman, Petroleum Section, and manager, safety department, Shell Oil Co., Inc., San Francisco, Calif.

(*d*) For manufacturing—J. L. Risinger, vice chairman, Petroleum Section, and safety director, Socony-Vacuum Oil Co., Inc., New York.

(*e*) For marketing—F. R. McLean, vice chairman, Petroleum Section, and manager, safety and insurance department, White Star Division, Socony-Vacuum Oil Co., Inc., Detroit, Mich.

2:30 Address. (To be announced.)

3:00 Educational Problem in Manufacturing Plants. Walter B. Rust, personnel manager, Standard Oil Development Co., Bayway, N. J.

3:30 "Oil Fires, Their Prevention and Extinguishment" (a sound motion picture), A. L. Anderson, safety engineer, Standard Oil Co. of California, San Francisco.

Wednesday, October 18

2:00 Problems in Cranking Oil-Field Engines, Vernon H. Taylor, chief safety supervisor, Union Oil Co., Los Angeles, Calif.

2:30 Medical Services in the Petroleum Industry, Dr. James W. Long, medical department, Gulf Oil Corp., Port Arthur, Tex.

3:00 Construction Problems, E. B. Heyden, general construction superintendent, Lummus Co., New York.

3:30 Qualification of Welding Operators, C. W. Obert, Sr., Linde Air Products Co., New York.

4:00 Election of 1939-40 officers.

Thursday, October 19

12:30 Luncheon.

Safety in the Petroleum Industry, H. N. Blakeslee, director, department of accident prevention, American Petroleum Institute, and secretary, Petroleum Section, N.S.C.

Presentation of awards—the 1938-39 Petroleum Section safety contest.

2:30 Organization of independents.

3:00 Pressure Equipment in Bulk Plants and Service Stations, Paul I. Schultz, factory manager and chief engineer, U. S. Air Compressor Co., Cleveland, Ohio.

3:30 Proper Design, Layout, and Maintenance of a Natural Gasoline Plant. (To be announced.)

4:00 A Model of Safety Techniques (panel discussion). Discussion leader, C. W. Smith, manager of safety, Standard Oil Co. (Indiana), Chicago.

Glenn Byers, assistant personnel manager, and safety director, Shell Oil Co., Inc., St. Louis, Mo.

Harry Markee, safety engineer, Phillips Petroleum Co., Bartlesville, Okla.

E. D. Murphey, safety engineer, Mid-Continent Petroleum Corp., Tulsa.

Stripper Well Association Plans Definite Policy

The directors of the Oklahoma Stripper Well Association, affiliated with the National Stripper Well Association, proposes to pursue a continuous campaign to provide an outlet for stripper wells in the oil states.

L. D. Winkler, of Duncan, Okla., at a special meeting in Tulsa last week, declared that the work of the association, in cooperation with Independent Petroleum Association of America, Mid-Continent Oil and Gas Association and others, had accomplished a great deal of good.

Plans for the annual membership meeting in October, before or after the I.P.A.A. convention at Fort Worth on October 18-20, will be in the hands of Howard J. Whitehill and H. A. Johnson, both of Tulsa, and Roy M. Johnson, Ardmore.

The committee was authorized to invite Harold L. Ickes, secretary of the interior, to come to Tulsa and address the association.

Burdette Blue, president of Indian Territory Illuminating Oil Co., Bartlesville, outlined a plan for the association's future efforts, and Pres. W. A. Goforth, named a permanent committee to outline a policy with Frank M. Porter, Ardmore, chairman, and W. W. Warner, Nowata, and L. W. Winkler, Duncan, as associates.

CALENDAR OF EVENTS

October

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Petroleum Division, Galveston, Tex., October 5-7.

TEXAS MID-CONTINENT OIL AND GAS ASSOCIATION meeting, Houston, Tex., October 5-7.

AMERICAN GAS ASSOCIATION, annual convention, New York, October 9-10.

NATIONAL TAX CONFERENCE, Palace Hotel, San Francisco, Calif., October 16.

SOCIETY OF AUTOMOTIVE ENGINEERS, annual dinner, Hotel Pennsylvania, New York, October 16.

NATIONAL SAFETY CONGRESS AND EXPOSITION, Petroleum Section, Ambassador Hotel, Atlantic City, N. J., October 16-20.

COLORADO PETROLEUM INDUSTRIES COMMITTEE, annual convention, Shirley-Savoy Hotel, Denver, Colo., October 17.

NATIONAL STRIPPER WELL ASSOCIATION, annual meeting, Fort Worth, Tex., Blackstone Hotel, October 17.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, tenth annual meeting, Fort Worth, Tex., October 18-20.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Petroleum Division, Los Angeles, Calif., October 19-20.

WEST VIRGINIA PETROLEUM ASSOCIATION, Hotel Daniel Boone, Charleston, W. Va., October 25.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Washington-Youree Hotel, Shreveport, La., October 27.

November

SOCIETY OF AUTOMOTIVE ENGINEERS, fuels and lubricants meeting, Mayo Hotel, Tulsa, November 2-3.

PETROLEUM FLUID METER CONFERENCE, under auspices of A.S.M.E. and College of Engineering, Oklahoma University, at Norman, Okla., November 2, 3, 4.

NATIONAL MOTOR TRUCK SHOW, Navy pier, Chicago, November 8-16.

AMERICAN PETROLEUM INSTITUTE, twentieth annual meeting, Stevens Hotel, Chicago, November 13-17.

TWENTY-FIVE-YEAR CLUB OF PETROLEUM INDUSTRY, first annual meeting and dinner, Stevens Hotel, Chicago, November 14.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, Providence, R. I. November 15-17.

CALIFORNIA NATURAL GASOLINE ASSOCIATION, annual fall meeting, Los Angeles, Calif., November 17.

December

WEST CENTRAL TEXAS OIL AND GAS ASSOCIATION, Abilene, Tex., December.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Philadelphia, Pa., December 4-7.

January 1940

SOCIETY OF AUTOMOTIVE ENGINEERS, annual meeting, Book-Cadillac Hotel, Detroit, Mich., January 15-19.

February

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, New York, February 12-15.

April

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, twenty-fifth annual meeting, Stevens Hotel, Chicago, April 10-12.

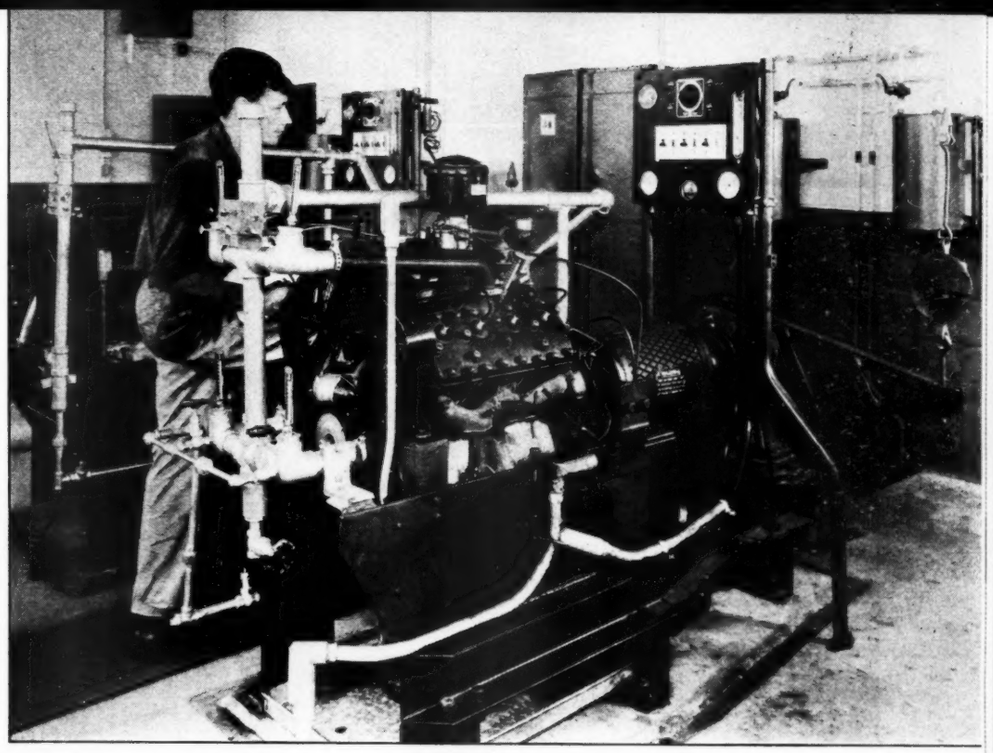
AMERICAN PETROLEUM INSTITUTE, eastern district, Division of Production, Columbus, Ohio, April 11-12.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Cleveland Hotel, Cleveland, Ohio, April 18-19.

May

NATURAL GASOLINE ASSOCIATION OF AMERICA, annual convention, Hotel Tulsa, Tulsa, May 15-17.

INTERNATIONAL PETROLEUM EXPOSITION, Tulsa, May 18-25.



Away from the routine of refining, researchers are constantly testing the performance value of motor fuels and lubricants under all kinds of conditions. A typical set-up appears here in which a hydraulic brake is absorbing the power generated by an ordinary automobile motor. The latter is operated at varying speeds, under varying atmospheric temperatures and at varying loads in order to determine whether the fuels and lubricants under test meet the extremes of driving. This unit is in the Philadelphia plant of Atlantic Refining Co.

ENGINEERING & OPERATING

OCTOBER 5, 1939

In This Section

RECYCLING TIDES EXPANDS WITH BIGGER GAS RESERVES

By George Wilson ..... Page 41

This article, first of a series which will thoroughly cover the subject of retrograde gas-condensate fields, describes plant operations and methods of processing, and presents a survey of gas-condensate fields in Texas and Louisiana.

PHILLIPS TO MAKE NEW AVIATION GASOLINE INGREDIENT ..... Page 43

The advent of alkylation, which will shortly be made by Phillips from natural and refinery gases, is destined to overcome certain limiting factors now prevailing in the path to still higher octane-number fuels. Its effect on the aviation industry is undoubtedly to be most significant.

INJECTION OF GAS INTO OIL RESERVOIRS

By H. L. Beidleman ..... Page 46

In many cases gas injection has been forced on producers, but it has generally proved to be to their best interests. Rapid progress is now being made toward complete utilization of entire pools, and it is felt that future profits of the industry are closely connected with the process.

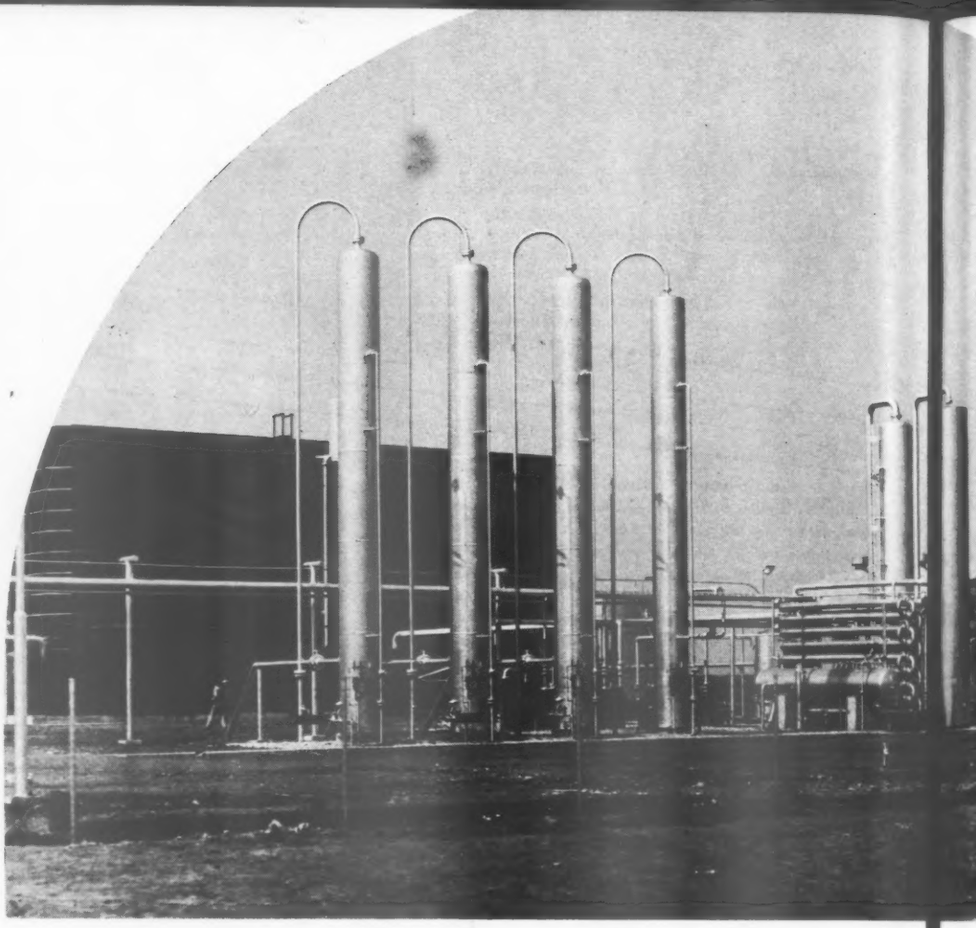
OPERATING IDEAS ..... Page 44

METALS IN DRILLING—By W. L. Nelson ..... Page 44

QUESTIONS ON TECHNOLOGY—By C. F. Francis, Ph.D. ..... Page 50

HIGH-PRESSURE GAS SERIES

This is the first of a series of five articles on the above subject to appear exclusively in The Oil and Gas Journal over the next 6 weeks. Prepared after months of study, investigation and travel, during which practically every "distillate field" and recycling or repressuring plant was visited, the Journal's staff, together with authorities in the actual operation of high-pressure gas wells and distillate plants, will present up-to-the-minute data on the design, construction and operating practices, a discussion of gas-testing methods and the vital legal considerations which must be given this modern problem.



Gas pressures up to 1,200 lb. are utilized in this gasoline plant

Recycling Trend with Bigger Gas

By GEORGE WEBER

CONDENSATE extraction and recycling of high-pressure gas reserves have gained an important share of the petroleum engineer's attention in the past 2 years. Embracing a new technology based upon the behavior of hydrocarbon mixtures in the retrograde condensation-pressure range, this work is still in its early stages. The widespread attention directed to this development was demanded by increasing discoveries of high-pressure gas-condensate reserves.

Terminology of this new phase of the industry is finding a standardized form. Definitions of what constitutes gas-condensate production are also fairly well established. However, it is best to review these terms before continuing the series.

Definition of Terms

The behavior of hydrocarbon mixtures fails to conform to the simple gas laws which govern vapor pressure and solubility relationships at pressures ranging from 700 to 1,200 lb. per sq. in., depending on the temperature and composition of the mixture. The pressure range whose lower limit is the beginning of this discrepancy, is termed the retrograde-condensation range. Throughout this range, the equilibrium constant which is a function of the percentage of hydrocarbons in the vapor phase, divided by the percentage in the liquid phase, reverses from the usual trend, and increases with increasing pressure. Thus, by decreasing the pressure on a hydrocarbon mixture in the retrograde range, a fraction of the hydrocarbons in the gas phase condenses or liquefies. This is in reversal to the behavior at lower pressures where the simple gas laws apply.

While the retrograde effect was known at the turn of the century, the resulting literature was all in the German language. A systematic investigation of the phenomena and application to light-petroleum fractions was not begun until B. H. Sage and W. N. Lacey undertook a research program sponsored by the A.P.I.[1] Other collaborators[2,3,4] have added to the knowledge, spurred by the need for condensate-recovery methods compatible with conservation laws.

The hydrocarbon fraction which liquefies on reduction in pressure in the retrograde range has been variously termed "distillate," "water white" oil or "condensate." The last term most exactly describes the product and is finding general acceptance.

Production of high-pressure gas, pressure reduction and separation of condensate, followed by compression and injection of the stripped gas into the same reservoir from which it was produced is termed "recycling." Production and extraction, followed by injection of the gas into another horizon is generally accepted under the classification of "repressuring." Repressuring, however, also includes the boosting of reservoir pressures with lean gas from natural-gasoline plants, and the only repressuring projects concerned in this discussion are those utilizing gas in the retrograde-pressure range. "Pressure maintenance" embraces recycling, but it is extended to include injection of gas into oil horizons, whereas recycling generally refers to pressure maintenance as applied to gas-condensate reserves. This discussion deals with recycling.

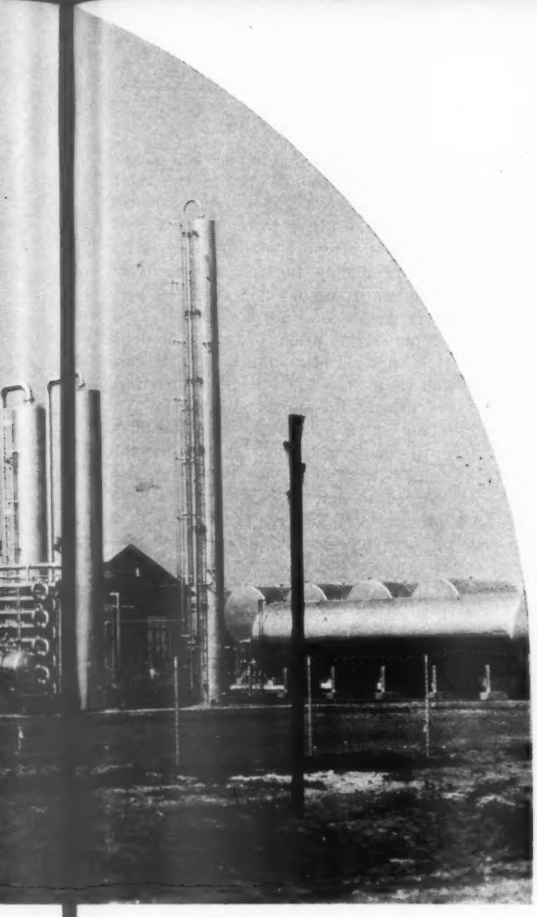
Condensate production is now uniformly defined as liquid hydrocarbons separated at the surface or in the well bore, which were in the vapor phase in the reservoir when at original pressure. Such production may occur in three combinations. The high-pressure gas may comprise the entire reserves of a sand body, with a continuous gas phase in the reservoir, classifying the field as a pure gas-condensate field, such as the Agua Dulce or Joaquin field. Or, the gas may constitute a gas cap overlying large oil reserves, as in Plymouth or Oklahoma City. Or, the gas condensate may comprise most of the reserves of a sand, with a narrow band of oil sand on the flanks of the structure, as in the case of Cotton Valley.

This varied occurrence, coupled with the wide range of pressures and gas-condensate ratios, make definition of gas-condensate wells difficult.

Condensate Wells

The Texas Railroad Commission and the Louisiana Department of Conservation have made preliminary lists of condensate wells. Their data are shown in Tables 1 and 2. Due to the complexity of well characteristics, the lists are considered incomplete at this time. However, they represent the most complete compilation to date. In Texas some condensate wells which are not being produced are not listed, due to lack of data on them.

Engineers of the Railroad Commission assume an arbitrary limit on the gas-condensate ratio, of 100.000 cu. ft. per barrel in generally classifying



located at Agua Dulce, Texas

dExpands sReserves

crepancies, even for fields with comparable pressures and temperature conditions. In Texas the ratios run from 17,000 to 1,400,000 cu. ft. per barrel of condensate. Condensate gravities show the same variable tendencies, from 31 to 78° A.P.I.

Some of the wells listed in these tables may be unsuited for gas-recycling developments, due to low yields or adverse structural conditions. On the other hand, some fields which show characteristics of gas-condensate production, such as the Hamman and Old Ocean fields, are not classed as such due to lack of conclusive data.

There is a need for a systematic survey of all petroleum reserves which might include gas-condensate properties, and thus constitute recycling possibilities. Differentiation between pure gas-condensate fields, gas caps, and gas horizons where oil is believed to exist down structure, will entail involved cross tabulation and for the purpose of indicating the extent of such reserves, straight listings are considered sufficient at this time. On the basis of these lists, it is noted that in Texas and Louisiana there are 123 fields and 742 wells producing gas and condensate. While

TABLE 1—GAS CONDENSATE FIELDS IN TEXAS

Field, county— District 1:	No. wells	Sand depth	Shut-in well-head pressure	M.c.f./bbl. gas-liquid ratio	Gravity condensate
Chittim, Maverick	8	5,600	1,400	150	64.5
District 2:					
Edna, Jackson	6	4,820-5,300	1,800	1,400	39
Fox, Refugio	2	6,200	900	78	63
Francitas, Jackson	1	7,400	2,810	23	64
East Goliad, Goliad	1	3,800	1,600	800	50
Greta, Refugio	2	5,700	2,100	32	50
Heyser, Victoria	5	5,600	2,150	120	51
Keeran, Victoria	3	5,200	1,800	170	43
La Rosa, Refugio	5	5,400	2,200	30	54-67
McFaddin, Victoria	1	5,200	2,100	150	48
Mission River, Refugio	5	6,200	1,500	35	65
Placedo, Victoria	7	5,300	1,200-2,450	150	43
Port Lavaca, Calhoun	2	6,200	800	90	58
Refugio, Refugio	6	6,800	2,400	35	62
Tomoconnor, Refugio	1	5,100	2,080	55	45
District 3:					
Aldine, Harris	1	6,800	2,600	33	53
Amelia, Jefferson	8	5,800-6,800	2,000-2,600	120	44-47
Anahuac, Chambers	3	6,700-7,100	2,150-2,600	75-400	53
Bammel,* Harris	5	6,600	2,300	50	58
Cheek, Jefferson	1	8,500	2,950	15	61
Clear Lake, Harris	5	5,600	2,400	135	48
Cleveland, Liberty	1	9,000	3,500	82	48
Conroe, Montgomery	6	5,100	1,720	60	51
Dickinson, Galveston	10	8,100-9,100	2,500-3,500	21-85	55
Eureka, Harris	2	7,700	2,800	36	59
Fairbanks, Harris	5	7,200	2,650	50	55
Fannett, Jefferson	1	7,660	3,300	65	53
Gillock, Galveston	9	8,500	2,800	40	58
Green's Lake, Galveston	1	6,900	2,350	120	48
West Hardin, Liberty	3	7,500	1,900	30	58
Katy,* Waller	10	7,500	2,700	60	52
LaBelle, Jefferson	3	8,625	4,800	78	49
Orange (West), Orange	1	5,500	2,100	110	58
Orchard, Fort Bend	5	6,700-7,000	2,400-2,700	35-50	52-53
Palacios,* Matagorda	2	7,900-9,000	2,800-5,100	22	46-62
Pickett Ridge, Wharton	3	4,700	1,700	350	31
Pledger,* Brazoria	12	6,750	2,600	123	70
Rosslyn, Harris	2	6,935	2,610	59	55
South Houston, Harris	1	4,500	1,200	150	46
Seabreeze,* Chambers	2	8,100	3,100	53	54
Segno, Polk	2	5,340-6,500	1,800-2,400	47-60	56
Tomball, Harris	37	5,600	2,000	80	55
Turtle Bay, Chambers	3	6,500	2,380	200	45-53
Willow Slough,* Chambers	2	8,300-8,700	3,000-3,200	117-122	41-49
District 4:					
Agua Dulce,* Nueces	36	4,800-6,800	1,400-2,400	20-75	55-68
Alice, Jim Wells	9	5,300	2,050	50	58
Aransas Pass, Aransas-San Patricio	9	7,100	1,400	50-100	58-62
Bandera, Jim Wells	2	6,800	3,150	70	60
Benavides, Duval	7	5,200	1,500	120	54
Bird Island, Kleberg	1	2,270	3,100	115	59
Captain Lucey,* Jim Wells	2	5,300-5,600	1,500-2,100	50-140	53
Chapman, Nueces	1	4,000	2,100	60	55
Clark, Jim Wells	1	5,300	2,100	100	52
Clara Driscoll, Nueces	7	5,500-5,700	1,500-2,200	50-75	58
Flour Bluff, Nueces	2	6,500	2,560	170	56
Tom Graham,* Jim Wells	5	4,600	1,960	60	58
La Blanca,* Hidalgo	9	7,500-8,000	1,400-3,400	350	54
La Gloria, Jim Wells	1	6,570	2,500	59	57
La Reforma, Starr	2	5,930	2,150	27	59
Lamar, Aransas	1	7,500	2,700	105	56
McAllen,* Hidalgo	1	7,400	3,400	85	55
Mercedes, Hidalgo	8	7,400	920	53	56
Plymouth,* San Patricio	2	5,890	2,450	44	62
East Premont, Jim Wells	1	5,630	2,375	43	58
South Premont, Jim Wells	1	7,550	3,470	56	49
Rincon, Starr	1	4,200	1,800	250	54
Riverside, Nueces	1	4,890	1,930	169	50
San Salvador, Hidalgo	1	7,500	3,400	40	58
Saxet Frio, Nueces	40	5,800-9,000	1,650-2,510	50	55-60
Sinton, San Patricio	2	5,400	2,150	50	50
Stratton Ranch,* Nueces	4	4,700-6,400	1,850-2,450	33-64	58-59
Sullivan City, Nueces	4	4,100	1,700	75	60
Sun, Starr	1	4,610	1,755	85	61
Sweden, Duval	4	4,600	1,700	125	58
Weslaco,* Hidalgo	1	8,610	4,050	115	51
White Point, East San Patricio	2	5,390	2,200	50	50
District 5:					
Buffalo, Leon	7	5,810	2,200	240	47
Oakwood, Leon	1	6,000	2,325	140	60
Opelika, Henderson	2	7,900-8,100	3,250	35	60
Red Lake, Freestone	3	4,890	1,795	400	56
District 6:					
Cayuga,* Anderson	42	4,000-7,200	1,500-2,700	45-80	70
Chapel Hill, Smith	1	7,500	3,100	17	63
Willow Springs, Gregg	2	6,020	2,545	75	55
Hembv, Anderson	1	5,800	2,200	290	59
Grapeland,* Houston	4	5,800	2,200	37	68
Long Lake,* Anderson	49	5,200	2,000	65	78
Navarro Crossing, Houston	1	5,850	2,350	170	51
Panola* (Carthage), Panola	3	5,960	2,650	40	60-66
Pulaski Ferry, Panola	3	5,700	2,630	65	62
Rodessa, Cass-Marion	6	5,600-6,000	1,200-2,150	50-180	59-65
Joaquin,* Shelby	3	5,000	2,315	130	62
Waskom, Harrison	1	4,830	2,000	200	57
Total (92)	499				

*Fields where recycling is proposed or under way.

wells as gas or gas condensate. This is not rigidly applied, however, since some wells producing over that limit are definitely condensate wells, and can be economically included in recycling projects.

Gas-condensate ratios cannot be used in direct comparison of wells unless testing methods are carried out uniformly, since the ratio is a function of the operating temperature, pressure and rate of flow.

The tabulated well-head and rock pressures are not definitely indicative of reservoir conditions, but their inclusion in the tables is necessary in the absence of bottom-hole-pressure data in most fields of this type .The well-head pressures will show a disparity in indicating bottom-hole pressures, due to the varying densities of the gas column. Thus, wells of comparable depth, which would be expected to show similar reservoir pressures, will maintain well-head pressures differing by several hundred pounds in many cases.

Data in Tables

A wide variation in pressures is noted in the well survey. In the two states, well-head pressures range from 800 to 5,100 lb. per sq. in., and estimated reservoir pressures vary from the minimum of the retrograde range to 6,400 lb. per sq. in. Likewise, gas-condensate ratios show wide dis-

TABLE 2—GAS CONDENSATE FIELDS IN LOUISIANA

Field, parish—	No. of	Sand depth	Estimated rock pressure	Est. rec. condensate (g.p.m.)	Monthly gas production (m.c.f.)	Gravity of condensate °A.P.I.
North Louisiana:						
Cotton Valley, Webster	76	8,096- 8,136	*3,706	2.86	1,364,000	62
Shongaloo, Webster	2	9,137- 9,157	2,850	2.8-3.24	25,000	57.6-61
Sibley, Webster	3	5,587- 5,614	2,400	0.19	9,017	58
Rodessa, Caddo	56	5,902- 5,922	*1,500	0.76	1,389,850	44.0-67
Longwood, Caddo	1	5,944- 6,002	1,909	0.98	9,545	51
Sligo, Bossier	29	2,720- 2,800 4,048- 4,235 4,848- 5,024	 2,100	.... 0.18	647,344	47-64.2
Bisteneau, Bossier and Bienville	7	5,154- 5,187 8,532	2,100 875	....	4,368	.....
Driscoll, Bienville	3	7,152- 7,218	2,800	0.39	368,049	.....
Bear Creek, Bienville	3	6,670- 6,705	2,890	0.53	144,232	58
Sugar Creek, Claiborne	12	5,710- 5,722	2,100	0.30	421,047	52-63
Lake Charles district:						
South Jennings, Jeff. Davis	2	9,638- 9,648	*3,900	0.73	118,825	51.6
South Elton, Jeff. Davis	1	9,075- 9,080	3,400	1.32	39,066	52
Lake Arthur, Jeff. Davis	6	8,540- 8,550 9,865- 9,880 10,108-10,120	3,200 *6,400 *6,400	1.26 3.28 1.9	403,000	51 55.6 52.4
Woodlawn, Jeff. Davis	3	9,376- 9,393	.....	.....	6,000	51
Chalkley, Cameron	1	8,558- 8,568	.....	0.38	42,000	52.9
Lafayette district:						
Bateman Lake, St. Mary	1	8,650- 8,660	2,900	0.85	33,185	53.6
Lake Mongoulois, St. Martin	1	9,675- 9,695	3,300	1.4	30,000	54.2
Bosco, St. Landry and Acadia	5	8,220- 8,230 8,424- 8,434 8,490- 8,505	*3,350	0.17	300,000	48
North Tepetate, Acadia	7	7,960- 7,970 8,508- 8,519	*3,950	2.94 1.00	260,000	47 64
Houma district:						
Paradis, St. Charles	1	9,895- 9,915	3,600	1.40	Shut in	53.8
Bayou des Allemands, St. Charles and La Fourche	1	9,453- 9,463	2,500	0.87	Shut in	56
Raceland, La Fourche	2	10,120-10,138		0.56	40,000	46.9
Lake Long, La Fourche	7	9,892- 9,906 10,416-10,419	3,900	1.06 1.79	291,354	47.9
Lake Barre, Terrebonne	1	10,460-10,560	2,400	0.62	7,979	.....
Lirette, Terrebonne	5	8,366- 8,381 10,520-10,524	4,000 4,500	0.41	34,495	48.7
Bay Baptiste, Terrebonne	1	11,172-11,178	4,800	0.77	Shut in	50
DeLarge, Terrebonne	1	10,254-10,266	5,000	1.27	106,890	48.5
Gibson, Terrebonne	1	8,639- 8,642	4,000	1.38	28,222	45.6
La Pice, St. James	1	10,910-10,915	5,200	0.67	Shut in	45.6
Hester, St. James	1	6,358- 6,354	2,900	3.0	Shut in	52
New Orleans district:						
University, East Baton Rouge	2	4,340- 4,352 7,158- 7,168	2,100 3,250	0.8 0.49	90,000	58.5
Total (31)	243				6,213,468	

*Estimated reservoir pressure.

high-pressure gas wells in other states add further to reserves, it is recognized that nearly all such wells are located in Texas and Louisiana.

Plant Operations

The added knowledge of phase equilibria, coupled with the valuable data from recycling operations, has accelerated the construction of recycling plants in the past year. At present 11 plants are operating in Texas, and 17 are either under construction or in the planning stage. Numerous pilot plants and experimental units are on stream, contributing data for future plant-scale operations. Also, detailed studies and tests are being undertaken in many other fields where recycling is definitely planned.

Table 3 lists the 16 recycling and repressuring plants now on commercial production, all of which are located in Texas. Their total high-pressure gas take averages 238,102,000 cu. ft. daily and they produce 170,807 gal. of condensate per day. The weighted average gravity of the product is 46.5, and the overall yield is 0.716 gal. per 1,000 cu. ft. of gas.

Methods of Processing

Three general processes are used in the plants. High-pressure absorption is utilized in the Agua Dulce Corp. plant in Agua Dulce and the American Liberty Oil Co. unit at Grapeland. In contrast, the Tide Water Associated Oil Co. and Seaboard Oil Co. employ extreme-low-temperature extraction at Cayuga. The Corpus Christi Corp. has installed dehydration equipment for low-temperature operation at Stratton. Other plants operate at temperatures above the limit where hydrates form from the fresh-water content in the condensate.

Five repressuring plants are included in this survey. These units, in the Cayuga and Engleman-La Blanca fields produce gas in the retrograde range from one sand and return it stripped to another sand. They differ from the true recycling plants in that pressure maintenance is not applied to the producing horizon, and no compression equipment is used, since injection pressures are lower than operating pressures.

The McCollum Exploration Co.'s repressuring plants in the Engleman-La Blanca district comprise one-well units. The 7,500-ft. gas is produced through the casing with a packer set below the sand. Following extraction of the condensate on the surface, the gas is returned through the tubing to the 7,900-ft. sand whose reservoir pressure was reduced to half its original by a blowout. Although production data are available on only two of these repressuring units, three additional one-well plants are now in operation. After 3 months of operating the original units, the well-head pressure from the 7,900-ft. sand rose 150 lb. per sq. in. Additional operations in the field will follow the recent permission given by the Railroad Commission to repressure the 7,900-ft. sand with production from the 8,000-ft. sand, whose condensate yield is similar to that from the upper sand. Due to the low yield of product, these operations are economically feasible only for repressuring, and some benefits may be found in added recovery of condensate from the 7,900-ft. sand from secondary saturation in the input gas. This possibility is indicated from theory, but not yet substantiated by actual operation. The repressuring operations in this field may continue until the reservoir pressure in the two producing formations has declined to 2,300 lb. per sq. in.

New Plants

In addition to the McCollum units, construction is under way or scheduled shortly on four recycling plants, and one plant is being increased in capacity. The largest project now under construction is the 140,000,000-cu. ft. capacity plant of the Coastal Recycling Co. in the Agua Dulce field. A total of 36 wells will be drilled to sands at the 4,600, 4,800 and 6,800-ft. levels, on an 8,000-acre tract, to provide gas for high-pressure absorption of condensate.

The Tide Water Associated Oil Co. and Seaboard Oil Co. have completed a 40,000,000-cu. ft. plant in the Long Lake field, and are adding to capacity of the Cayuga plant. Davis & Co., Inc., is planning construction of a 66,000,000-cu. ft. plant in the Tom Graham field, and the Condor Petroleum Co. and other Grapeland producers are working on plans for a 20,000,00-cu. ft. plant in that field.

TABLE 3—SURVEY OF RECYCLING AND REP

Field	Agua Dulce	Agua Dulce	Bammel	Cayuga	Cayuga	Cayuga	Cayuga
County	Nueces	Nueces	Harris	Anderson	Anderson	Anderson	Anderson
Company	Agua Dulce Corp.	Process Oil Co.	H. M. Harrell	Tide Water-Seaboard	Roeser & Pendleton	Edens	Tide Water Wills "A"
Type of plant	Recycling	Recycling	Recycling	Recycling	Repressuring	Repressuring	Repressuring
Number of intake wells	6	1	5	5	1	1	1
Depth of intake wells	4,829-4,913	4,758-4,768	6,162-80	4,000	7,642	7,500	7,416
Producing formation	.....	.....	.....	Woodbine	Trinity	Trinity	Trinity
Number of injection wells	3	1	1	5	1	1	1
Depth of injection wells	4,788-4,890	4,800-4,816	6,162-80	4,000	4,081	4,020	4,078
Injection formation	.....	.....	.....	Woodbine	Woodbine	Woodbine	Woodbine
Intake gas volume, m.c.f.	32,398	11,283	8,000	26,780	2,865	3,382	3,925
Disposition of gas, m.c.f.							
Extraction loss	538	154	100	550	.....	38	40
Plant use	858	1,557	200	605	.....	.....	.....
Drilling	666	.....	.....	.....	.....	.....	.....
Pipe line	.....	.....	.....	.....	574	.....	.....
Repressuring and recycling	30,336	9,572	7,700	25,625	2,291	3,344	3,885
Vented	.....	.....	.....	.....	.....	.....	.....
Pressures:							
Intake pressure	1,992	1,540	2,300	1,490	1,620	1,920	2,070
Plant working pressure	1,200	1,131	1,100	1,220	1,460	1,485	1,665
Injection pressure	1,966	1,820	2,900	1,550	1,460	1,465	1,645
Production:							
Average daily, gallons	21,550	5,140	8,400	21,979	6,174	1,714	1,815
Gravity, A.P.I.	69.5	66	61	81.5	65.0	56.0	54.5
Recovery, g.p.m.	0.66	0.45	1.05	0.82	2.15	0.507	0.462

*Weighted averages.

The F. H. E. Oil Co. is making a series of tests for a proposed plant at Long Lake, and the Stratton field may gain added recycling operations with construction of the proposed Texon Royalty Co. plant. Turner & Smith are drilling five wells in their newly discovered Carthage field, following which plant construction will begin. In addition, it has been reported, though not confirmed, that the Atlantic Refining Co. is considering recycling for the Weslaco field, and another lower Rio Grande Valley plant is rumored for the La Sal Vieja field. The Hamman Exploration Co. has projected a 30,000,000-cu. ft. plant in the Hamman field, and experimental units have been provided for and operated in the Pledger and Old Ocean fields. Other Texas fields where experiments have been carried out are Driscoll, Katy, Palacios, McAllen and Rooke.

Louisiana Possibilities

Louisiana, with many recycling possibilities, has yet no commercial operations of this type. The largest project in that state is the proposed 150,000,000-cu. ft. plant for the Cotton Valley field. An experimental plant in the field has proven the feasibility of recycling, and the legal work toward complete unitization of multiple ownership is going forward. The Atlantic Refining Co. is operating a high-pressure absorption pilot plant at North Tepetate, with future plans pending results from the data obtained. Lake Arthur and South Jennings are other gas-condensate fields where recycling is proposed.

Economic Significance

Although practical application of recycling technology has kept pace with research work, the actual production of condensate at present is very small in comparison with the potential output. The plant designer and operator today are faced with varying economic factors which govern their action, and future uncertainties may be influencing many to postpone plant construction.

Under present conditions, and with sufficient reserves and yield to justify recycling, an operator may expect a relatively short payout on his plant. An incentive to early recycling operations is the quicker realization of income from gas-condensate wells which may represent frozen assets without a suitable gas outlet. The added income from condensate production, which is largely lost without pressure maintenance, may represent the determining factor in present plans.

Against these arguments for undertaking recycling at this time, may be placed the rapid obsolescence of extraction methods, which is the normal result of active research work in the petroleum industry. Recycling plants in general, however, are simple and adaptable to improvements after construction, as compared with complex refining units. The rapid improvement in testing methods will give the operator a more accurate yardstick for future operations over the next few months, but testing units now in the field give excellent data on well characteristics and expected recovery. Present economic conditions may serve to accelerate recycling-plant construction in view of the possible rise in equipment prices and also the probable increase in the price of condensate or condensate products.

There is also the factor of legislative control of gas-condensate production. Proration of gas-condensate wells incorporated into recycling systems is today applied only in the allowable percentage of a gas well's potential flow. Reduction of allowables of such wells cannot be based on violation of conservation measures since the recycling process is the highest example of conservation. However, recent trends which show the increasing factor of market demand in determining proration policies, may possibly affect this type of operation, should production of condensate reach important volumes. An indication of such a condition was seen during the last session of the Texas legislature, when proration of wells in recycling projects was proposed.

Despite the large volume of recycling-plant construction at this time, the total output of condensate will not comprise a serious threat to the crude or gasoline market for some time. Two outlet possibilities for the future indicate that it will not greatly affect the natural-gasoline market, which has lost much of its blending outlet in the octane race.

The first is the increasing use of stabilization and distillation equipment in the recycling plants. With this equipment the raw condensate may be refined into naphthas, motor fuel and kerosene or distillate for absorption in markets in which they represent but a small percentage of the supply. The feasibility of refining the product to motor fuel depends upon the octane value of the gasoline, although the refined fraction generally shows a high lead susceptibility, and leading to the desired octane is usually economically sound.

In addition to direct marketing of refined condensate, it may find an added market as charging stock to catalytic re-forming units. Low gas losses and greatly improved octane ratings are already obtained in cracking units of that type, and the future may find recycling plants tied in directly with re-forming units where large reserves and long-time production of condensate is assured. Polymerization is already being considered as an attendant operation to recycling, utilizing the high-pressure gas. However, this further gas demand cuts into the volume of gas returned to the reservoir, partially offsetting the benefit of pressure maintenance.

Unitization Requirements

One of the greatest factors retarding wider adoption of large-scale recycling projects is the difficulty met in unitization, pooling and the resulting formation of field plans for production and injection of the gas. In fields where structural regularity and sand uniformity provide good drainage possibilities, a field-wide plan for recycling is greatly to be desired. Complete unitization will repay operators with reduced development costs on wide spacing, and will provide the highest ultimate recovery of condensate in the reservoir. While the values of unitization are generally recognized, the legal work attending such plans is involved and difficult. It may be expected that in the future state control bodies will promote such plans with statutory cooperation.

The presence of several recycling plants in the same pool, with input and production wells spaced without regard to a system for sweeping the reservoir with lean gas will largely defeat the purpose of recycling over a period of time. Obviously many fields with faulted and lenticular structures do not lend themselves to field-wide plans, and irregular recycling projects will serve the purpose. However, the need is urgent for cooperation among producers and royalty owners where systematic location of producing and injection wells will provide the maximum replacement of rich, virgin gas with recycled gas.

The legal groundwork for plans in multiownership fields is necessary before recycling plans can be carried out on a field-wide basis. Recycling in some fields at the present time is awaiting the completion of pooling agreements among operators.

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SURING PLANTS IN OPERATION IN TEXAS

Eligleman Hidalgo Pantana & McCollum Expl. Co. Repressuring	Grapeland Houston American Liberty Oil Co. Recycling	Joaquin Shelby Portex Oil Co. Recycling	La Blanca Hidalgo Pantana & McCollum Expl. Co. Repressuring	Long Lake Anderson Anco Gas Corp. Recycling	Long Lake Anderson Trinity Gas Corp. Recycling	Sea Breeze Chambers Sun Oil Co. Recycling	Stratton Nueces Corpus Christi Corp. Recycling	Willow Slough Chambers Sun Oil Co. Recycling	Total 16 Recycling 11 Repressg. 5
1	2	1	1	3	1	1	4	3	
7,500	6,050	5,000	7,500	5,300	5,322	8,700	6,400	8,414-8,526	
.....	Woodbine	Glen Rose	.....	Woodbine	Woodbine	.....	.....	.....	
1	1	1	1	1	1	1	2	2	
7,900	6,026	5,000	7,900	5,300	5,322	8,795	6,400	8,362-8,781	
.....	Woodbine	Glen Rose	.....	Woodbine	Woodbine	.....	.....	.....	
16,000	8,944	11,715	8,000	18,776	14,971	7,500	53,563	10,000	238,102
506	180	107	.....	455	353	.....	1,274	.....	4,295
...	224	276	.....	1,836	154	80	683	80	6,553
.....	.....	206	.....	.....	.....	.....	.....	.....	872
.....	.....	.....	619	.....	.....	.....	.....	.....	1,193
15,494	8,540	11,126	7,381	16,226	14,464	7,420	51,606	9,920	224,930
.....	.....	.....	.....	259	.....	.....	.....	.....	259
2,250	2,100	2,100	2,900	2,000	1,900	2,925	2,200	2,331	
1,800	1,050	1,200	1,950	1,250	1,100	1,800	1,200	2,425	
1,800	2,250	2,470	1,800	2,100	2,100	3,625	2,940	3,300	
1,849	6,930	3,623	1,800	16,290	10,353	3,150	51,000	9,040	170,807
52.0	71.0	60.2	52.0	71.0	70.0	49.0	60.5	38.0	*46.5
0.116	0.775	0.31	0.225	0.87	0.69	0.42	0.95	0.90	*0.716

New high-octane aviation-gasoline material, known as neohexane, is expected to have tremendous influence on the aviation industry, greatly increasing airplane's speed and power

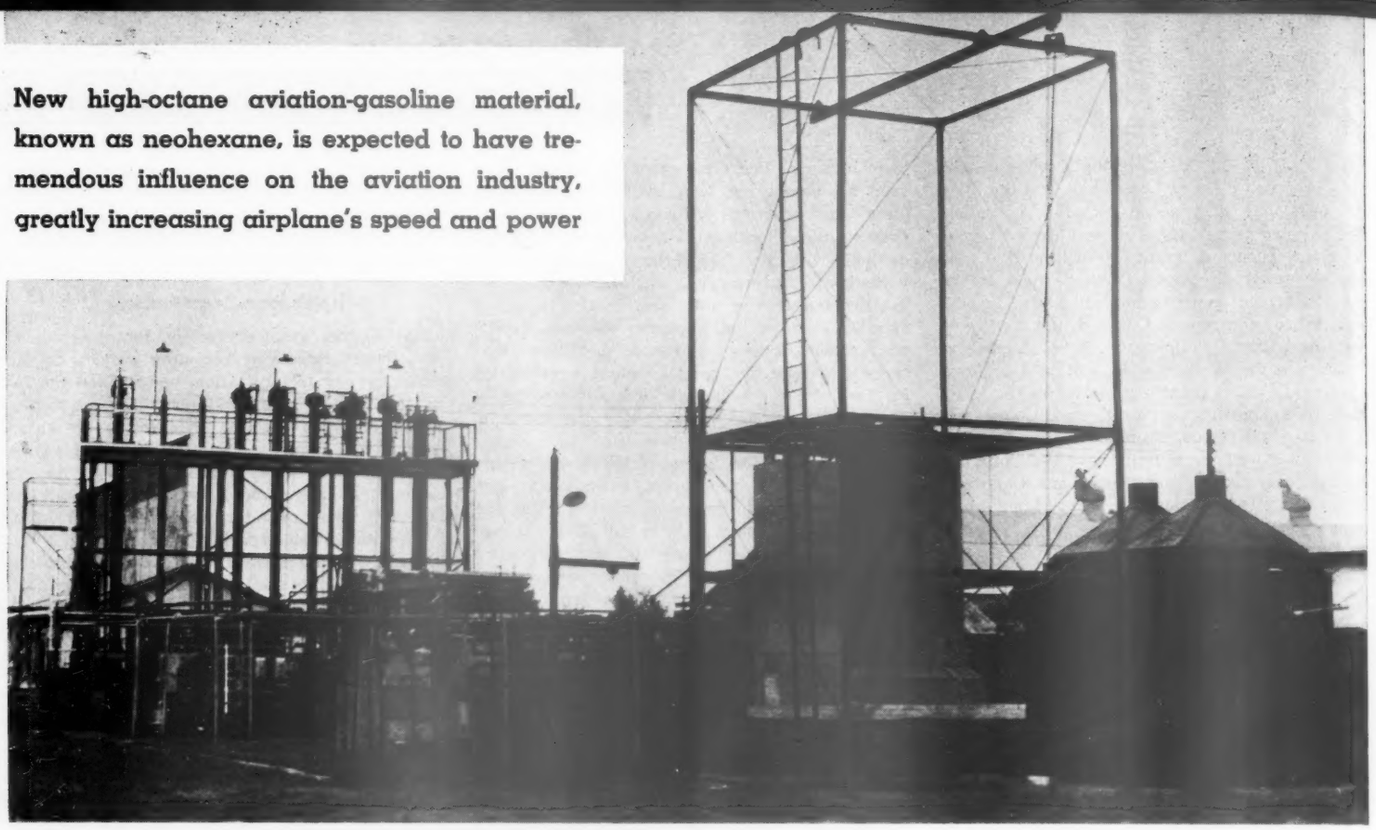


Fig. 1—General view of pilot plant at the Borger, Tex., refinery of the Phillips Petroleum Co., where neohexane, a new, high-octane value aviation fuel, was developed

Phillips to Make New Aviation Gasoline Ingredient

. . . from natural and refinery gases

THE recent announcement that Phillips Petroleum Co. will make available to the aviation industry in the immediate future a high-octane aviation gasoline material known as neohexane has given rise to a great many questions about the characteristics, sources, and economics of this material. From information available about this radical advancement in aviation-gasoline technology, it appears that neohexane will have far-reaching effects on the increasingly active aviation industry. It has been estimated that the increase in power which can be gained by using aviation fuels made from neohexane may be as much as 50 per cent over the power now obtained by present transport planes from ordinary aviation gasoline. In the military aircraft field the new fuel will undoubtedly greatly increase the efficiency of fighting planes, where rate of climb, speed, and cruising range are of the greater importance.

Chemically, neohexane is 2,2-dimethyl butane, a hydrocarbon somewhat similar in structure to isooctane. While this hydrocarbon has been known to scientists for a number of years, as a synthetic laboratory product made by laborious and expensive methods, it has never before been available in quantities of more than a quart or two at a time. The first accumulation, anywhere in the world, of quantities larger than this is that produced by Phillips at the pilot plant shown in Fig. 1. The first quart produced, before the construction of this pilot plant, cost many thousands of dollars; and that does not take into consideration the many man-months of work put in before that time in studying this material and the means for manufacturing it.

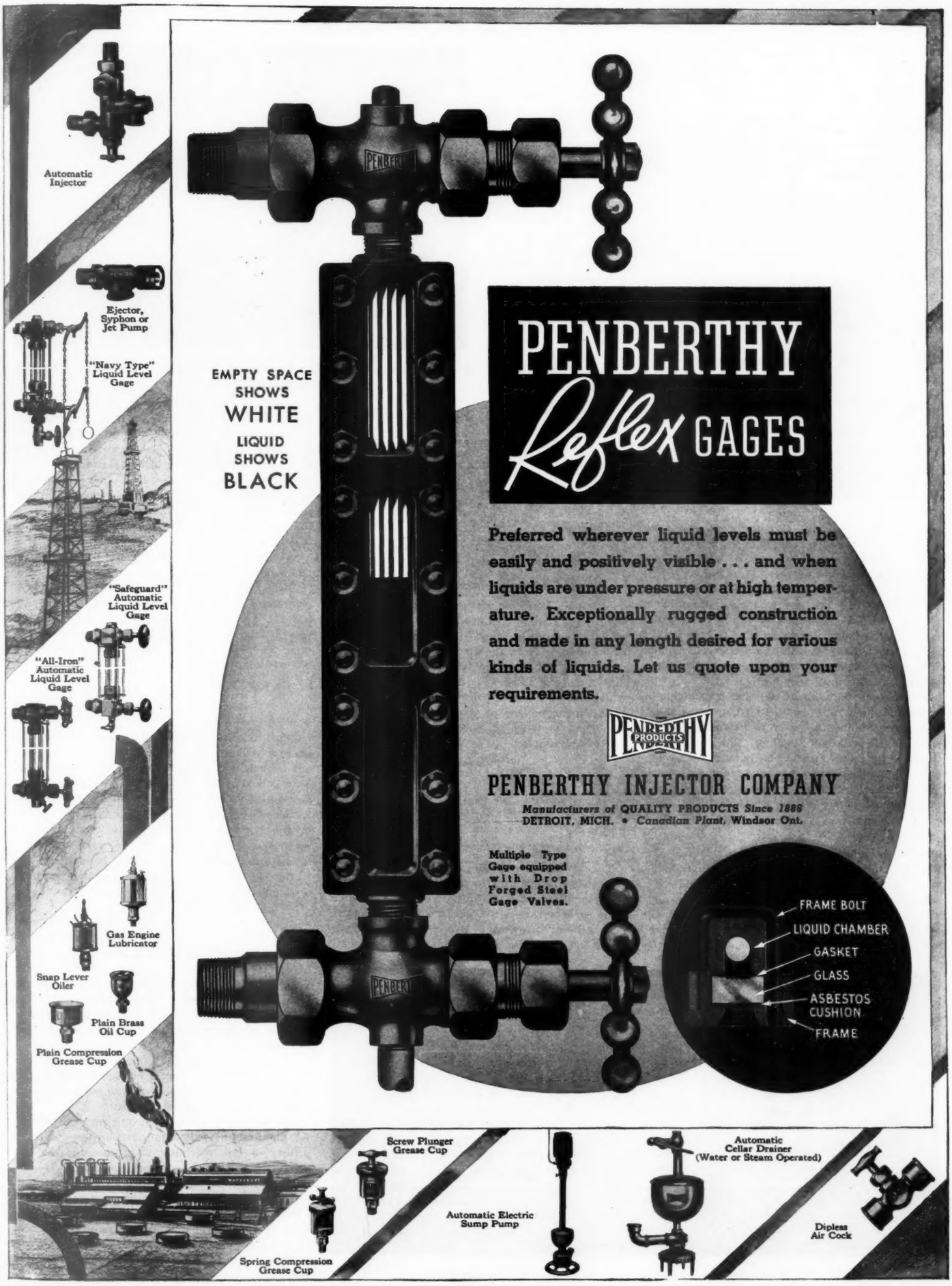
Rarity of Neohexane

Although there are a tremendous number of hydrocarbons of all types in crude oil, the existence of neohexane in usable quantities in petroleum fractions has never been reported to date. The National Bureau of Standards after the most exhaustive and thorough analysis ever made on crude oils reported it to be essentially absent. With the exception of one recent instance, careful analyses of natural gasoline have likewise been made without finding this material present. Despite the rarity of this hydrocarbon material in nature, it has been found that neohexane can be readily made from raw materials which occur plentifully in natural gas and crude oil.

In 1927 Graham Edgar, of General Motors Corp., announced the separation of isooctane, a pure hydrocarbon material, in General Motors Research Laboratory, and pointed out the superior properties of this material as an antiknock fuel. Today, isooctane is being produced in relatively large quantities from refinery gases by several companies and from natural gas by Phillips Petroleum Co., and forms the basis for our present-day 100-octane aviation-gasoline industry. During the past decade, research men of the oil and automotive industries have been investigating the possibility of other hydrocarbons as superior antiknock material. Although several superior antidetonants were found, isooctane remains, until now, the only synthetic, high-octane, aviation-gasoline material being produced on a commercial scale. The announcement by Phillips of plans to put into operation a full-scale plant for the commercial synthesis of neohexane, a new high-octane aviation-gasoline ingredient, marks a further advancement in this field.

Early announcement stated the new fuel is considered to be of such importance by the National Bureau of Standards that they are undertaking an investigation of it in connection with their cooperative work with the National Advisory Committee for Aeronautics on the development of high-octane aviation fuels. The fuel has also, of course, aroused the interest of all engineers concerned with the advancement of aviation.

During the past several years when foreign governments have been building up their military aircraft positions by manufacturing large number of planes, the United States Government has concentrated most of its efforts in this field on technical advances in the performance characteristics of the individual aircraft. As an example of the benefit which may be derived from such activities on the part of our government, the use of 100-octane gasoline resulted in a gain of 25 per cent in the basic power output of military aircraft over previous performance. Clearly this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"All-Iron" Automatic Liquid Level Gage
Gas Engine Lubricator
Snap Lever Oiler
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Screw Plunger Grease Cup
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is an essential factor in determining victory or defeat in aerial combat, since such a great advantage means quicker takeoff, faster climb, greater cruising radius, and speedier ships. In passenger and airmail services the use of higher-octane-number gasoline means more safety, more pay load, more speed or more comfort depending on the engineering use made of the increased basic power output.

Overcoming Limiting Factors

The advent of neohexane is expected to overcome certain limiting factors now prevailing in the path to still higher-octane-number fuels. It is expected that under optimum conditions the use of the new material will result in another 25 per cent increase in basic power output. Thus, more than 50 per cent increase in basic power can be realized in the transition from 87-octane-number gasoline to new neohexane aviation fuel.

Neohexane has the following physical properties:

Boiling point, °F.	121
Specific gravity	0.6498
A.P.I.° gravity	84.9
Reid vapor pressure, lb.	9.5

The octane number of neohexane in the pure state has been determined to be 95. However, its effect in aviation blends is such as to permit the manufacture of aviation gasoline in the neighborhood of 115-octane number.

The most important advantage of neohexane as an aviation-gasoline ingredient is an outgrowth of a corresponding disadvantage of isooctane. Although isooctane has an octane number of 100 in the pure state, it cannot be used alone as an aviation gasoline because its vapor pressure is too low to afford the necessary volatility for satisfactory aircraft-engine operation. For this reason high-octane aviation gasolines are generally blends of isooctane with isopentane (a compound of high-octane number but too high volatility to be blended alone with isooctane) and a straightrun gasoline, which must be included in spite of its low-octane number in order to balance the volatility of the aviation gasoline. The inclusion of these lower-octane materials in the blend impairs its antiknock properties so that even with the addition of tetraethyl lead, octane numbers greater than 100 are seldom achieved.

The volatility characteristics of neohexane are such that a perfectly balanced aviation gasoline may be manufactured by blending this material with isooctane and isopentane. All the ingredients of an aviation fuel so manufactured would have octane numbers of the same order as isooctane and, as a result, octane numbers considerably above 100 can be produced with the addition of lead. The advantage of neohexane then lies in the fact that it affords, as a substitute for the low-octane straightrun gasoline now used in high-octane fuels, a material having the same approximate boiling range but having far greater antiknock properties. With the appearance of this material on the market neohexane will be the only available high-octane material of moderate volatility.

In the following tabulation are shown the distillation characteristics of neohexane, commercial isooctane and a 45-55 blend of the two. It will be seen that the blend is well within current aviation-gasoline specifications.

Absorption unit at the Phillips Petroleum Co.'s plant at Eunice, N. M. This is a straight absorption installation

A.S.T.M. DISTILLATION DATA

	Neohexane	Commercial isooctane	Blend (45% neohexane)	Conventional maximum specifications
10% evap., °F.	120	225	148	167
30% evap., °F.	120	230	162	
50% evap., °F.	121	234	190	212
70% evap., °F.	121	240	277	
90% evap., °F.	122	263	251	275
Sum of 10 and 50	241	459	338	307

Better Tetraethyl-Lead Susceptibility

Although neohexane has an octane number slightly lower than chemically pure isooctane, this effect is counterbalanced in the manufacture of aviation fuels from the two ingredients, because neohexane has a better tetraethyl-lead susceptibility. This is illustrated in the following table which shows the quantities of tetraethyl lead required in neohexane to give it antiknock properties equal to those of isooctane when leaded in various amounts.

	TEL required to equal leaded isooctane	
cc. TEL/gal. c.p. isooctane	Neohexane	50% neohexane 50% c.p. isooctane
1.0	1.3	1.1
2.0	2.2	2.1
3.0	2.9	2.9
6.0	4.5	4.9
9.7	6.0	...

The tetraethyl-lead contents in the horizontal rows were determined to be mutually equivalent by a modified A.S.T.M. antiknock test. Modifications are necessary in the regular knock testing procedure because present test methods are not adequate for evaluating octane numbers in excess of 100. The third column of the table shows equivalent blends of equal quantities of neohexane and isooctane. While the tabulation shows neohexane to require a little more lead at lower concentrations than chemically pure isooctane, it should be remembered that commercial isooctanes on the market have octane numbers and lead susceptibilities which are poorer than either the c.p. isooctane or the neohexane.

Neohexane is manufactured by a process known technically as thermal alkylation. The raw materials for the process are: (1) Ethylene; a gas commonly found in refinery vapors, and (2) isobutane; a natural gas or refinery product of a slightly higher vapor pressure than ordinary butane. The chemical equation by which neohexane is manufactured is:

$$\underset{\text{(Ethylene)}}{C_2H_4} + \underset{\text{(Isobutane)}}{C_4H_{10}} = \underset{\text{(Neohexane)}}{C_6H_{14}}$$

Fig. 2 shows a simplified flow diagram of the process (covered by Phillips Petroleum Co. patents) by which neohexane is manufactured. Isobutane is sent to a furnace where it is heated to around 900° F. under pressure of more than 1,000 lb. per sq. in. Ethylene and isobutane are reacted in the alkylation furnace. Fractionation equipment is provided to produce a commercial neohexane product of good purity. Incidentally the boiling points of the concomitant hydrocarbons are such that commercial neohexane can be of very high purity.

It is estimated that enough ethylene, or ethane, and isobutane, are being currently produced in the United States to manufacture over 1,000,000,000 gal. per year of neohexane. When we consider that the total consumption of all types of aviation gasoline in the United States is only one-tenth of this figure, it can be seen that the production of neohexane will not be hampered by any inadequacy of raw materials.

It seems probable that the economics of neohexane will depend largely on the activity of further trends toward improving the performance of military and commercial aircraft.

The development of neohexane and the process for manufacturing it resulted from the combined efforts of the operating and research staffs of Phillips Petroleum Co. Prominent in this research and development work has been G. G. Oberfell, vice president in charge of research; M. P. Youker, vice president in charge of refining; F. E. Rice, vice president in charge of natural gasoline; R. C. Alden, director of research, and F. E. Frey, associate director of research in charge of the polymerization section.

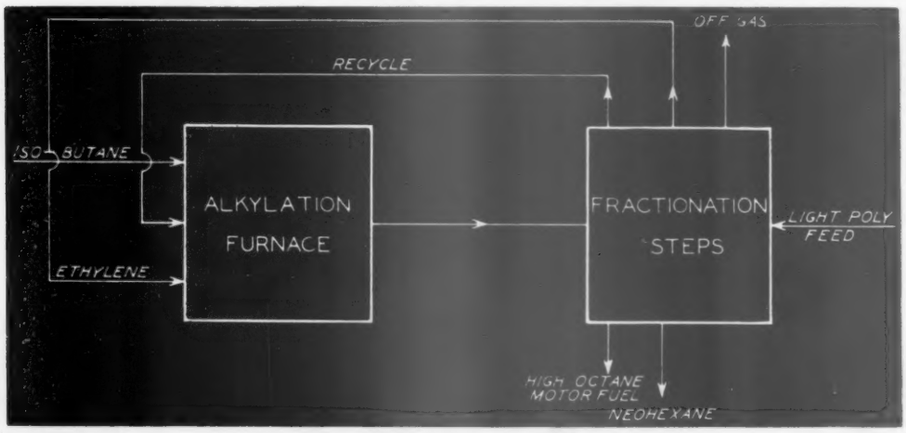

Fig. 2—Simplified flow chart for the manufacture of neohexane

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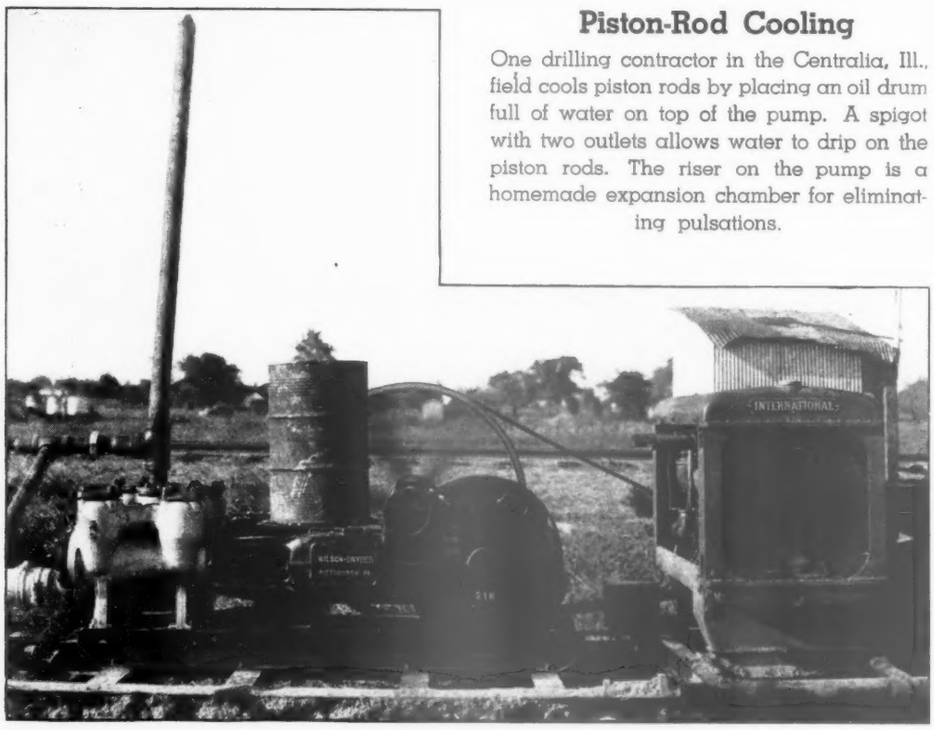
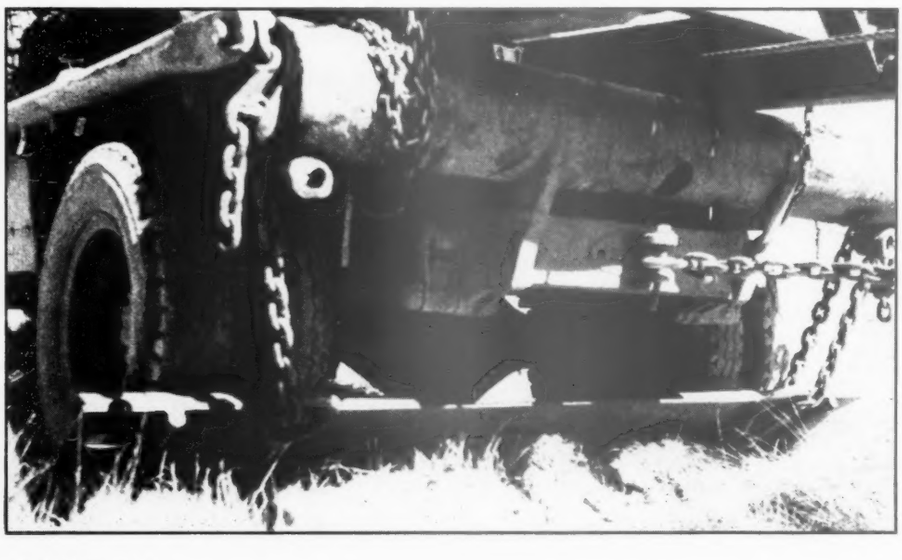
Piston-Rod Cooling

One drilling contractor in the Centralia, Ill., field cools piston rods by placing an oil drum full of water on top of the pump. A spigot with two outlets allows water to drip on the piston rods. The riser on the pump is a homemade expansion chamber for eliminating pulsations.

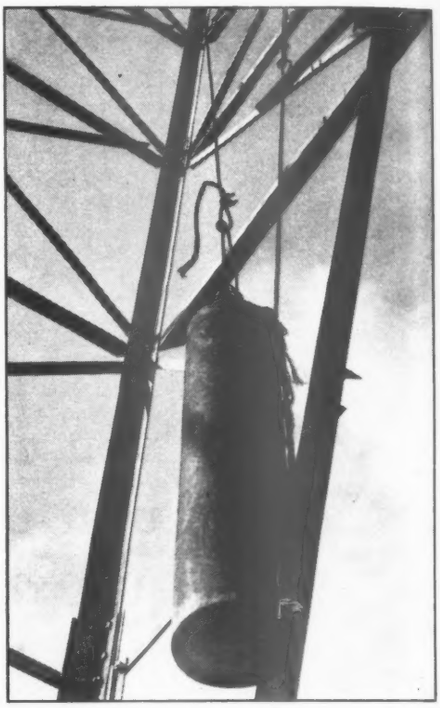


Scotch for Rear Truck Wheels

In skidding derricks from location to location in the Permian basin area of West Texas and New Mexico, medium-weight trucks are often used to pull the derrick, using the truck winch. Since the truck would sink into the sandy soil, or skid backwards when the winch is pulling the heavily loaded derrick, contractors have devised various type "scotches" for bracing the rear wheels. One of the most efficient in use is the type shown here. A row of teeth made from 1-in. tool steel and about 5 in. long are welded across the back side at the bottom. Thus whenever the truck begins skidding backward the teeth dig into the ground, and the more the pressure is increased the more firmly they become set. Heavy chains are used to suspend the scotch behind the wheels from the truck bed, their length being adjusted to give the most efficient results. A split piece of 3-in. drill pipe was welded across the top of the scotch to reduce the amount of wear on the tires.



Wire Line Used for Guide on Counterbalances



Counterbalances on the pipe tongs used on a rotary rig hang too far out in the derrick unless they are held close to the derrick corner by guides. For a long time many drilling crews used pipes for this purpose, the pipe being attached to the side of the derrick. An eye, made from a pipe collar a size larger than the pipe used, was welded to the counterbalance and slipped over the guide pipe. This contractor uses a smaller eye on the counterbalance and ⅝-in. wire line for a guide. The wire line has a turnbuckle at either end of a hook for attaching it to the derrick girt. Tightening of the turnbuckles keeps counterbalance in place.

Belt Guard for Rotary Pump

In the Seminole field, Oklahoma, one contractor has designed a belt guard which can be put together in sections. The average belt guard is made in one piece. This sectional belt guard can be put together without difficulty by one man. The screened opening in the guard permits the operator to examine the belt easily.

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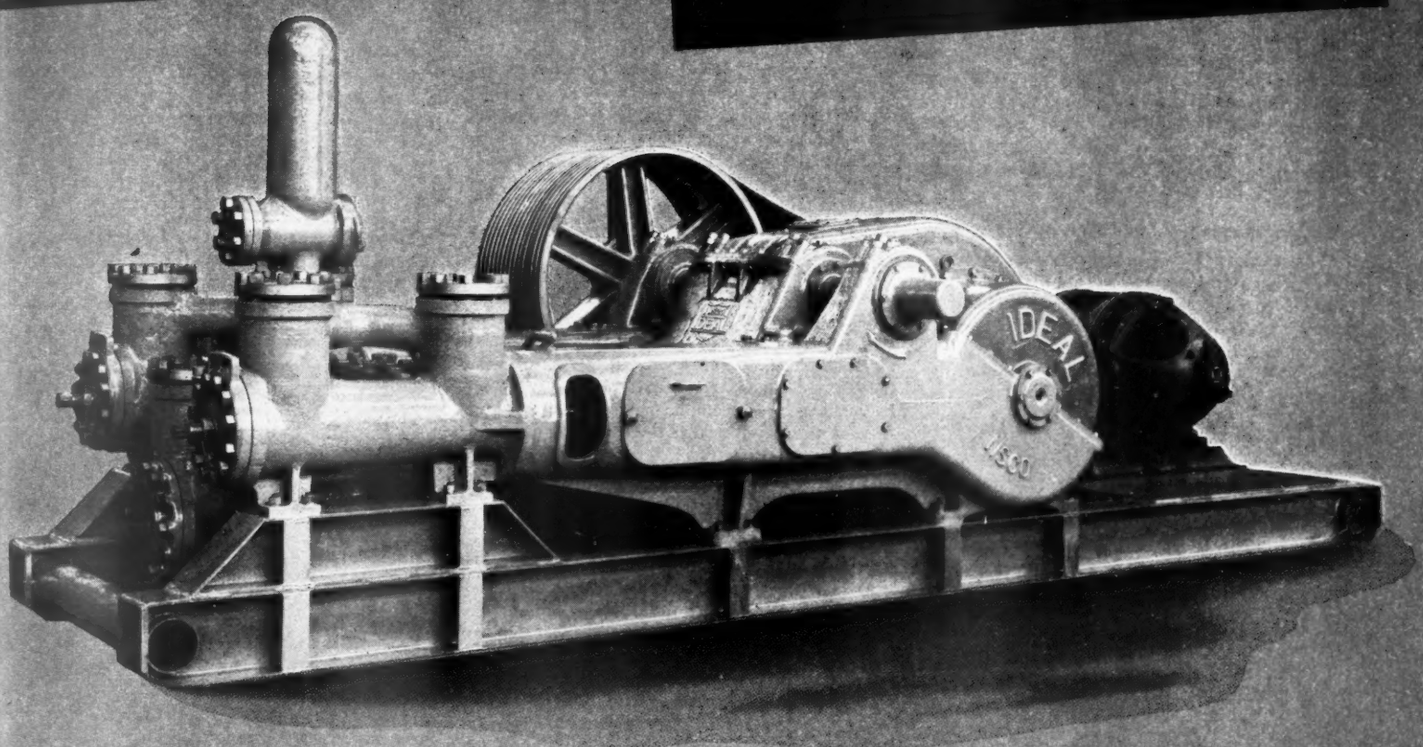

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C-100	6¼"	10	1,500	520	65	100	11,100
C-150	6¾"	12	2,000	550	65	150	17,000
C-250	7¼"	15	2,500	710	60	250	28,975
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Injection of Gas Into Oil Reservoirs

By H. L. BALDWIN

THE injection of gas into oil reservoirs in which natural energy has been depleted now occupies an important place among the modern practices of producing oil. The earlier applications were made by injecting air into formations at relatively low pressures. As experience increased, natural gas was substituted for air wherever economically possible, and the process was applied to reservoirs in the earlier stages of life, with correspondingly higher pressures. At the present time it is being applied to some fields during the earliest stages of development, with pressures in excess of 4,500 lb. per sq. in.

Movement of Gas Through Sands

Physical properties of producing sands.—It has been only within the past 10 years that the importance of sand properties of a sand other than the porosity has been generally recognized. There are few references to permeability in the literature before 1928, although the basic principle was stated by H. d'Arcy in 1856. The importance of permeability in connection with oil-producing problems was perhaps first recognized in connection with water-flooding problems in Pennsylvania. Its use in conjunction with porosity measurements rapidly replaced the use of porosity alone, which had been used for many years.

Permeability is generally measured on small cores of sand, after extraction of the oil and thorough drying, by measuring the rate of flow of a homogeneous fluid such as air or water through the core at definite pressure gradients. It may be measured either parallel to the bedding (horizontal permeability) or perpendicular to the bedding (vertical permeability). Importance of fluid viscosity has been shown, which proved to affect the rate of flow in inverse proportion to its absolute value (centipoises), so that any fluid of known viscosity may be used for permeability measurements provided it does not affect the sand by solution or chemical reaction. The permeability of the extracted and dried sample is generally known as the specific or dry permeability, and has been found to be related to the size and distribution of the pores, and to be independent of the porosity.

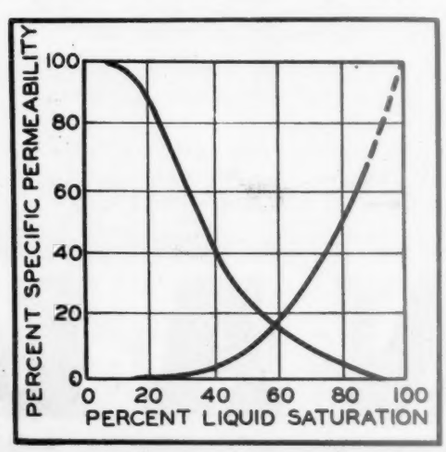

Fig. 1—Relation between liquid saturation and relative permeability to oil and gas

There are other sand characteristics, such as surface coatings on the grains, which may have a great influence on the flow of oil and gas mixtures due to the effect of their relative interfacial tensions with gas, oil, and water.

Principles governing the flow of oil and gas through sands.—It was recognized that the laws of a homogeneous flow through a sand would not necessarily apply to the flow of a mixture of oil and gas, so experimental work was undertaken to determine principles which might be applied. Work has shown the relation between the per cent of liquid saturation of a sand and the ratio of the effective permeability to the specific permeability for gas and liquid. This in turn may be reduced to the relation between the gas-liquid ratio of the flow through the sand and the liquid saturation. Experimental work has shown these relations to be essentially the same over a wide variation in the specific permeability of the sand and with liquids of different viscosities. Fig. 1 shows a general average of the published curves on these ratios for varying liquid saturations. It indicates that the permeability to gas is practically zero until the liquid saturation has been reduced to 90 per cent, then increases slowly until it becomes 30 per cent of the specific permeability at 45 per cent saturation. Below this saturation the ratio increases rapidly until it reaches 90 per cent at 20 per cent saturation. With less than 20 per cent liquid saturation, the liquid content has little effect on the permeability to gas, probably because the remaining liquid is in the smaller pore spaces that are out of the direct line of flow. Fig. 2 shows these relations when reduced to gas-oil ratios in cubic feet per barrel by applying the relative viscosities of the oil and gas. The solid line shows the gas-oil ratio-saturation relation for an oil and associated gas at a pressure of 2,000 lb. per sq. in. where the viscosities are 0.8 and 0.019 centipoises respectively, while the dashed line shows the same relations for the same oil and associated gas after the pressure has been reduced to atmospheric and the viscosities have changed to 2.2 and 0.011 centipoises. The advantages of applying gas injection during the period of high reservoir pressures is apparent, as the same gas-oil ratio will give a lower saturation at the higher pressure. These figures are presented merely to show relative values, as the actual values will be affected by other considerations discussed later.

If gas is injected into the crest of a structure to form a gas cap or to enlarge an initial gas cap before the liquid saturation has fallen below 90 per cent by loss of gas from solution, the oil in the direct channels of flow will be moved ahead of the gas by a positive displacement, and the recovery of oil will be relatively high. The effect of gravitational separation will be an aid in maintaining a sharp boundary between the oil and the gas cap, whereas such separation may be negligible in the average oil sand after the viscosity of the oil has been increased by the loss of solution gas. On the other hand, when formation pressures have declined to the point where the separation of gas from solution has reduced the liquid saturation below 90 per cent, it will be more difficult to effect a liquid drive, as the gas will be able to pass through the oil sand with less driving effect on the oil.

Measure of Energy

Since the amount of gas in solution in the oil at the original reservoir pressure is a measure of the energy available to move oil to the producing wells, it follows that recovery should be greater from pools containing large volumes of gas in solution. Also, an initial gas cap represents additional energy available for increasing recovery, provided it is utilized in the proper manner and not wasted. The producing gas-oil ratio is an index to the efficiency of utilization of the gas. It must be expected to increase as the saturation in the sand becomes lower, unless a portion of the gas is from a gas cap, or production is from zones of widely different permeability in which case the resultant of the ratios of the different zones may show a decrease. The various forms of gas injection are merely means of increasing the energy to move oil to the wells and to decrease the saturation in the sand by increasing the gas-oil ratio through it.

Effects of connate water.—It is important to observe that the foregoing principles were derived from experiments on sands without connate water. It is now believed that all oil sands may contain water in amounts up to as high as 50 per cent of the pore space without producing water with the

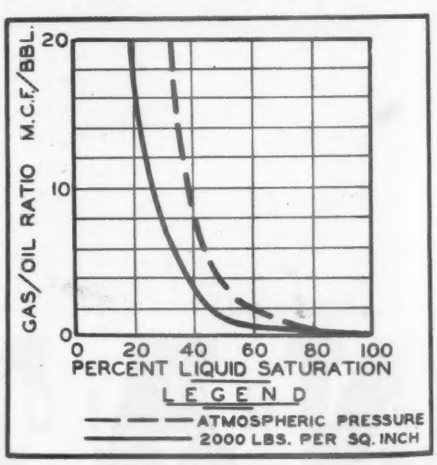

Fig. 2—Relation between liquid saturation and gas-oil ratio. Oil at 2,000 lb. pressure is at 0.8 centipoises and gas at 0.019; oil at atmospheric pressure at 2.2 centipoises and gas at 0.011

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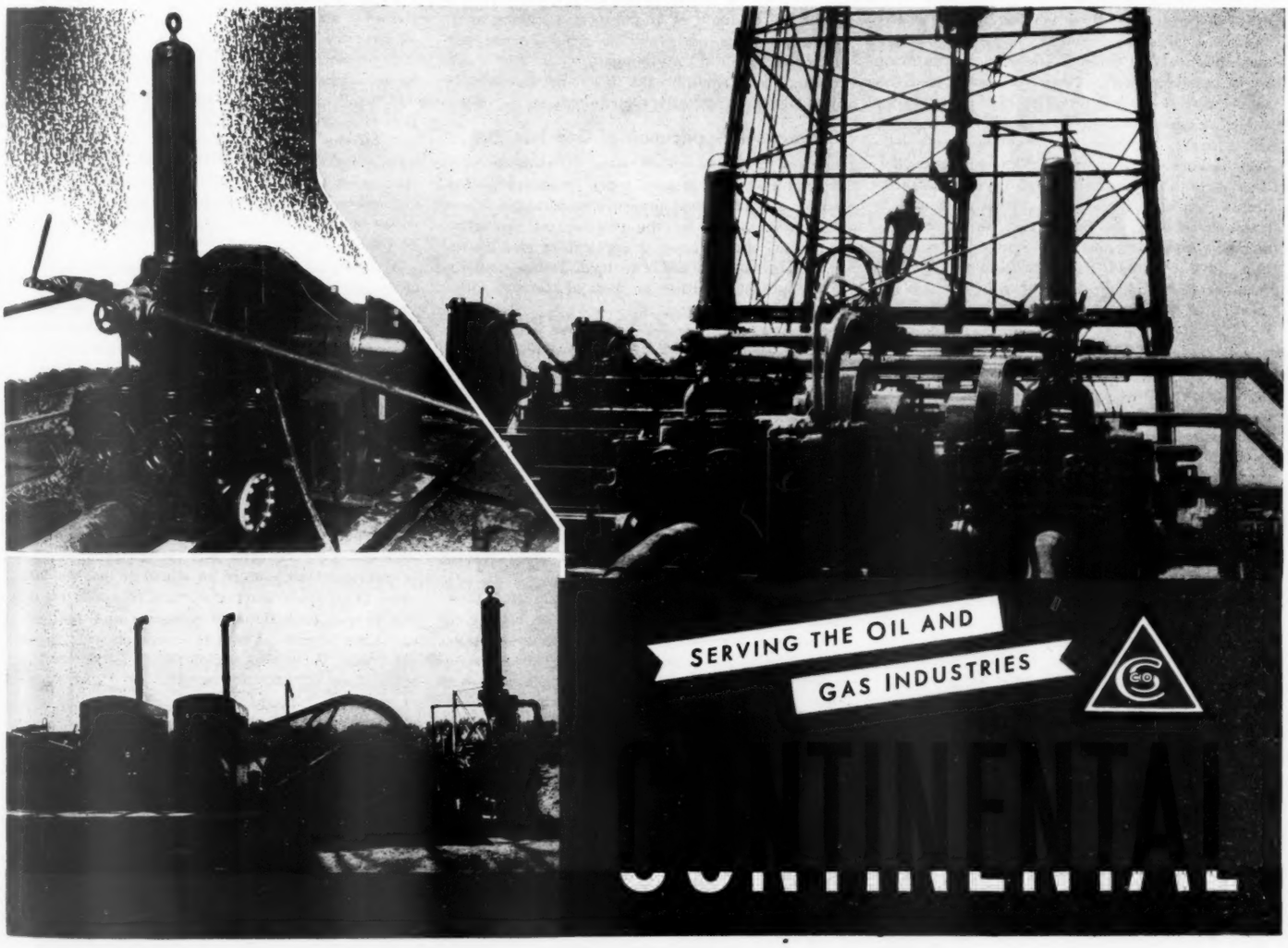

oil. The water occurs as a film on the sand grains and in the smaller pore spaces which are isolated from the direct channels of flow. The presence of such water may not affect the relation between the total liquid saturation (oil plus water) and the permeability to gas, but will greatly affect the percentage recovery of oil, since the water is not produced. Botset and Muskat have conducted experiments on sands containing varying amounts of water which indicate that the percentage recovery of the oil originally present increases directly with the percentage of water. Hence, we may expect that a greater percentage recovery of oil will be obtained with a given gas-oil ratio through the sand than is shown in Fig. 2, and, if the connate water is present in sufficient quantity to wet all of the sand grains and to fill all of the pore spaces out of the direct line of flow, that oil recovery may be nearly complete without excessive gas-oil ratios.

The maximum amount of connate water that may be held in a sand without gravitational separation is probably influenced by the ratio of sand-grain surface to total pore volume, among other factors. It should therefore increase as the permeability decreases. It is possible that the actual amount present may depend on the manner in which the sand became saturated with oil; that is, it may differ considerably between lenticular and continuous sands.

Before making any direct application of the foregoing principles to the actual practice of gas injection, it should be remembered that they apply to only a small portion of a sand of homogeneous composition. Before the advent of permeability tests, many sands were thought to be uniform throughout their vertical section as well as over a large areal extent. Application of permeability tests to cores has shown that uniformity is rarely present. When it is considered that sands were deposited in water, that their composition is dependent on the material brought to their locality by currents, that they may have been reworked by changes in the currents after their original deposition, that bedding is often highly irregular, that thin layers of mud may be interbedded over the entire body or in irregular masses through it, and that changes in cementation have occurred during consolidation, it is remarkable that some sands exhibit as much uniformity as they do.

Secondary Recovery

Any variation in the character of a sand must be considered in applying secondary recovery methods. Core analyses are of great value for this purpose, but they show only the variation throughout the vertical section unless a sufficient number of cores are taken to allow conclusions to be drawn regarding the lateral changes from well to well. When shale breaks are present, it is often found that lenses of sand may occur within a large body of sand which are of such limited lateral extent that continuous permeability does not exist from well to well unless the spacing is very close. Such conditions may not be recognized until they are evident from the movement of gas after injection has been started.

When a sand body, composed of layers of varying porosity, permeability and connate water content, saturated with oil and gas at a uniform pressure, is opened to production by the drilling of wells, the oil and gas are moved to the wells by the energy contained in the gas dissolved in the oil. The zones of high permeability produce at a high rate, and their pressure is reduced with a certain gradient towards the producing wells. Zones of low permeability produce at a lesser rate, and the pressure gradients are higher and confined to a smaller distance from the wells. When production has continued at a maximum capacity for a number of years, the average pressure of the reservoir may fall to a low value and the pressures in the different zones may be quite different, as well as their oil saturations. Such variations in pressure and saturation will cause variations in effective permeability of much greater magnitude than the variations in specific permeabilities obtained from core analyses. The difficulty of obtaining a uniform movement of gas through all parts of the sand is thereby greatly increased.

If production is restricted by application of back pressure to producing wells, the pressure drops within the sand members are less, liquid saturation remains higher because more gas is retained in solution, and production of oil is more efficient. Pressures in the various zones of the sand then remain more nearly equal. However, the relation between the rate of recovery and the percentage ultimate recovery is a controversial subject, and cannot be discussed here other than to point out that there is an advantage in maintaining pressures in the various zones as nearly uniform as possible. This can be done only with a restricted rate of production.

While the preceding discussion refers particularly to sands, it may be applied to a certain extent to limestones and dolomites, provided allowance is made for the fact that permeability is often caused by solution, and that it may therefore be distributed quite erratically throughout both the vertical section and lateral extent. The average vertical permeability may sometimes greatly exceed the average horizontal permeability. Dense sections of dolomites may occur within the structural limits of an oil pool having porosities as high as 12 per cent or more, without appreciable permeability. These dense portions may contain only connate water and would compare with shale breaks in a sand, but may be much more irregularly distributed.

Practical Application of Gas Injection

Types of gas injection.—Gas injection may be divided into three general types: pressure maintenance, gas drive, and pressure restoration. These are distinguished by the relative oil saturation remaining at the time of application and by the method of application. The term repressuring is often applied to either or both of the two latter types.

Pressure maintenance. — Pressure maintenance may be defined as a method of producing an oil pool so that as much of the original reservoir pressure is maintained as is possible. Under this definition it will include in addition to gas injection the injection of water below the oil-water contact to give an artificial water drive, and the control of producing gas-oil ratios. A more limited definition is: The return of all available gas to the producing formation for the purpose of decreasing development costs, prolonging the period of natural flow, increasing recovery, and creating a gas reserve.

The ideal type of reservoir for pressure maintenance is one with a sand section of high horizontal and vertical permeability, a large structural closure, an initial gas cap, and an effective water drive. In such a reservoir, development costs may be reduced by drilling the producing wells near the edge of the pool, returning all gas to the gas cap, and driving oil down to the producing wells by an expanding gas cap and up to them by a controlled water drive. The relative movements of the gas cap and the advancing water may be controlled by the volume of gas injected and the rate of withdrawal of the oil. Average reservoir pressures may be maintained at a high ratio to the original pressure, recovery will be high, and natural flow should continue for the life of the pool. A valuable gas reserve will be available after oil production has ceased.

Such ideal conditions are seldom found, but the application of pressure maintenance may be no less desirable. When an effective water drive is lacking, either entirely lacking from discontinuity of the sand or effective at a rate lower than that necessary to maintain pressures at the desired oil-withdrawal rate, pressure maintenance will have all the advantages of the ideal type with the exception that average reservoir pressures will decline and natural flow may not be possible for the entire life of the pool, unless gas from another source is injected. Although the volume occupied by gas returned to the reservoir is greater than its former volume as solution gas in oil, this increase is generally insufficient to compensate for the volume of oil removed and the gas which must be used for operating purposes.

Lack of a gas cap may indicate that the oil is undersaturated with gas under reservoir conditions, but this is not necessarily true. Since energy available for recovery is less, pressure maintenance will be even more desirable. It is improbable that any appreciable volume of the injected gas will go into solution in undersaturated oil, as the degree of contact will be too limited.

A low structural relief is a disadvantage in the application of pressure maintenance, as the lateral spread of the gas cap will be relatively large and the problem of retaining the gas in the reservoir will be more difficult. Any breaks in the sand and variations in permeability throughout the vertical section will also complicate its application. For example, if gas injection is limited to the top zone, pressure maintenance will be effective only in that zone. Control of producing gas-oil ratios will be more difficult, as the areal extent of the gas caps may be different in the different zones. However, gas injection may be fully justified by the savings obtained by the production of a greater quantity of oil by natural flow and by the conservation of gas. It must be remembered, however, that it is the net gas-oil ratio (produced less returned) that affects the reservoir pressures, and the chief disadvantage of high ratios is the increased cost of returning the larger volumes to the sand.

A relatively low average permeability is a decided disadvantage in any type of gas injection (and in almost all producing problems as well). A larger number of producing wells are necessary to produce a given quantity of oil without excessive pressure drops at the sand faces in the wells. Higher pressure differentials above reservoir pressure are necessary for injection, and the cost of injection will be increased by the necessity of using relatively low separator pressures to produce by natural flow. Low average permeability means lower percentage recovery by reason of higher abandonment pressure. The justification for pressure maintenance must depend on a balance between the costs and the expected results.

Pressure maintenance in distillate pools.—Mixtures of hydrocarbons of certain composition under proper conditions of pressure and temperature may be present in a reservoir entirely in the gas phase, yet produce a liquid, generally termed a distillate, at a high gas-liquid ratio. By reason of this phenomenon, known as retrograde condensation, a reduction in the reservoir pressure below a certain value will cause the condensation of a portion of the gas, thereby reducing the recovery. Unless there is an effective water drive present, it may be necessary to return all gas remaining after the extraction of the distillate to the reservoir to maintain pressures above the condensation pressure to obtain recoveries high enough to insure profitable operation. Gas injection must be made in such a manner as to mini-

(Continued on Page 53)

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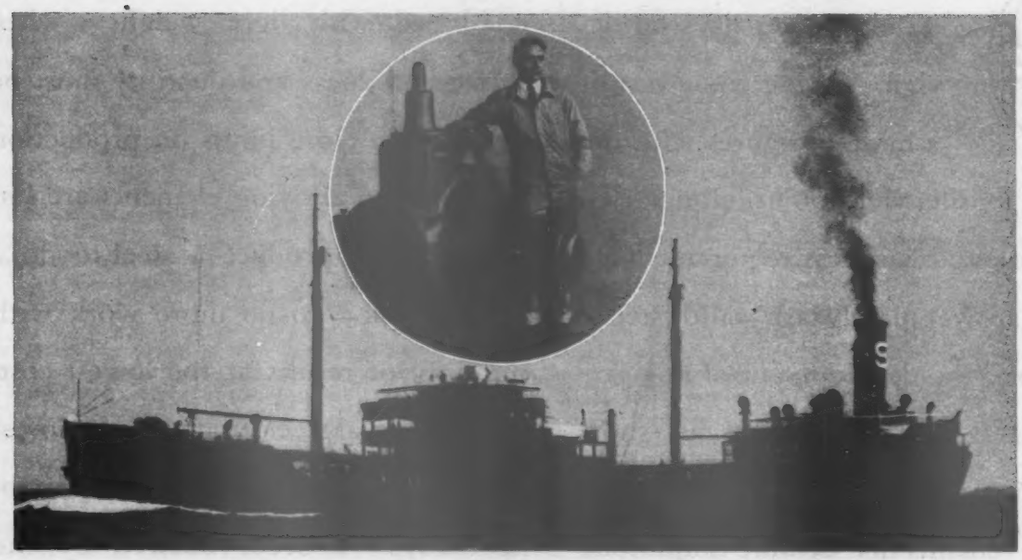

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mize the channeling of the injected dry gas to the producing wells, as the distillate content will otherwise be reduced. The small difference in gravity of the wet and dry gas will not assist in maintaining a separation. The influence of such dilution and the possible change in the condensation point from a change in the composition of the gas must be considered when estimating recoveries from such pools.

The Gas Drive

The injection of gas into an old pool for the purpose of "driving" oil to producing wells is termed the gas drive or repressuring. It is generally applied at a time when reservoir pressures are a low portion of the original, and the per cent liquid saturation has been reduced to values so low that appreciable permeability to gas is present and the oil must be moved by a viscous drag rather than a displacement. An abrupt increase in producing gas-oil ratios generally follows gas injection, followed by a very slow increase as injection is continued and the saturation of the sand is reduced by passage of gas through it.

It is evident that the maximum recovery can be obtained only when gas is injected in such a manner as to obtain the maximum coverage of both the areal extent and vertical section of the sand. Recovery from those sections of the sand that are not penetrated by gas may be retarded by the influence of higher producing back pressures, so that it is important that the maximum coverage be obtained. The movement of gas depends on the effective permeability of each zone of the sand and the pressure gradients within each zone. Some control of the pressure gradients may be obtained by the location of input wells, the volumes of injected gas, and the back pressures on producing wells. Control of the coverage within the vertical section may be obtained to some extent by the use of packers for insulating sections of different average permeability, and by methods of changing the effective permeability such as the injection of water or selective plugging.

Experience has shown that the oil production from wells affected by an input well will increase with the input volume up to a certain limit, beyond which an increase in volume may cause a decrease in production. Still further increases in input volume will cause high-producing gas-oil ratios and the well is said to be channeled. It is probable that oil is continually moving into the zones of high permeability from the adjacent tighter sand of higher pressure. When the volume of gas injected is increased, the pressure differentials which cause this movement may be changed to such an extent that it is entirely stopped or even reversed in direction. The optimum input volume can be determined only by trial for each well, and the best practice is believed to be to start with a relatively low volume, increase it gradually, then reduce it slightly when further increases do not cause an increase in production or give a higher producing gas-oil ratio.

The selection of the proper input pattern to secure good areal coverage by the gas is important. Unless sand conditions are uniform over a large area, a definite geometric pattern is not necessarily the best. Since the gas cannot be made to move to an area of higher pressure, and it is generally impossible to change the pressure distribution within the reservoir by this method of injection, wells for input should be selected in the areas of higher pressure, if possible without abnormally high injection pressures. Initial well productions, with allowance for the time of completion, and static fluid-level measurements are much more important to consider in the selection of input wells than present rates of production. Wells on the edges of a lenticular body of sand should be selected for input, as it is generally impossible to affect their production by injection into central wells which are usually in areas of lower pressure.

While the use of gas from another source is often necessary for a successful gas drive, there are many instances where excellent results have been obtained by merely recycling the produced gas. While the average reservoir pressure continually decreases, the gas-oil ratio through the sand, which is the principal factor in reducing the oil saturation, may be sufficient to insure good recovery. In sands of high permeability the gas production often exceeds the gas input, but the only detrimental effect on recovery is that caused by increase in viscosity as the average pressure is lowered.

Pressure restoration.—The injection of gas into a depleted oil pool in sufficient quantities to materially increase its average pressure is known as pressure restoration. The conservation of excess gas from a nearby field or from another horizon in the same field is often the chief purpose of the initial return of gas, but the excellent results which have accompanied such return in many instances recommend its use for the primary purpose of increasing oil recovery where gas may be obtained in sufficient volume at a reasonable price.

The early history of pressure restoration in California where it was started for the conservation of gas is discussed by H. C. Miller. The best-known example of this method is the operations of the Humble Oil & Refining Co. near Olney, Tex.

This method has a number of advantages over the gas drive, among which are a decrease in the viscosity of the oil through solution of gas, a minimizing of the effects of permeability differences by forcing gas to enter the tighter portions of the sand, and a partial correction of irregular water encroachment conditions. Among its disadvantages may be included the necessity of greatly restricting or discontinuing production during the period of injection, and the necessity of a relatively large investment with a deferred return whose value will depend on future crude-oil prices.

Although there will be a tendency for gas to move toward the structural high, regardless of its point of injection, the time available will generally be entirely too short to even approach the conditions of a distinct gas cap with no dispersed gas throughout the oil. It would appear that sufficient gas should be injected into the structurally low wells to insure the saturation of the oil to the greatest extent possible, after which the remainder of the gas may be put in at the crest of the structure to increase the pressure sufficiently to put all gas possible into solution. When production is started gas should be recycled in a manner similar to pressure maintenance, but higher producing ratios may be expected as it will have been impossible to have increased the percentage saturation sufficiently to reduce the permeability to gas.

This method has sufficient advantages to recommend its application where an abundant supply of gas is available.

Gas Injection and Unitization

All varieties of gas injection involve the movements of gas and oil through a sand in a manner which, while it is subject to limited control on the part of the operator, must conform to the structural and physical characteristics of the reservoir. It is never possible to make such movements conform to the boundaries of surface ownership. It is then necessary to compromise with efficiency or lose a part of the effects to adjoining operators. Even though all operators unitize their leases under one operation, the danger of damage suits from royalty owners is always a threat to efficiency of recovery. It may be stated that no operation involving the injection of gas can be conducted with maximum efficiency without complete unitization of both working and royalty interests over the entire area of the pool.

The growth of pressure maintenance has been contemporaneous with the restriction of the rate of production by state proration and the growing demand for the conservation of gas, both of which are fundamental to its operation. In many cases gas injection has been forced on producers, but has generally proved to be to their best interests. Much progress is now being made toward the complete unitization of entire pools, and it is believed that the future profits of the oil industry are intimately connected with such unitization and the application of pressure maintenance.

As the discovery of new reserves has become more difficult, and development costs have risen with the greater depths, many operators have found that additional reserves may be created by applying gas injection to old pools at less cost than by making new discoveries. Gas injection has often been made in a haphazard manner for the purpose of merely maintaining production until better crude-oil prices will allow more intensive development. This has prevented the loss of many millions of barrels of oil in fields which would not justify redrilling after abandonment. Higher crude-oil prices will undoubtedly cause a large increase in all types of gas injection.

Wash-Over String at Continental's Deep Test

In the washing-over and cutting-out job at Continental Oil Co.'s No. 1 Proctor, SE NW Section 28-10n-20w, Washita County, Oklahoma, described in last week's issue, the washover string consisted of 493 ft. of 7-in. o.d. 26-lb. Spang Chalfant extreme line casing with Spang Chalfant thread. Mention of this is made here to correct the statement that another type of thread was used on this material. The 3½-in. drill pipe used in the well is equipped with Hydril internal-flush tool joints. Hydril and not Doheny Stone is the correct designation for this type of tool joint.

BOOKS

OUR COMMON HERD. By Sue Sanders. 162 pp. Garden City, N. Y.: Country Life Press. $1.

This absorbingly interesting autobiography will be keenly appreciated by everyone associated with the oil industry. It relates the experiences of a dauntless, pioneer type of woman who gets into the oil industry more or less by pure chance, and who amasses considerable wealth therefrom, only to lose it in an attempt to pyramid her income by becoming an independent operator. Starting from scratch, she stages a comeback, during which she adds enormously to her wisdom and philosophy.

PETROLEUM PRODUCTION. By Wilbur F. Cloud. 613 pp. Norman, Okla.: University Press. $5. (Third printing.)

A comprehensive discussion of the fundamental operations and technical processes of petroleum production, this book is a good source of information for the oil company executive, the student and the practical production engineer. Special geological problems and oil-well drilling alone are excluded, except as related to oil and gas-well completion and operation.

METALS in DRILLING

By W. L. NELSON

PART 5—DRILLING HOISTS

MATERIALS that have been suggested for catheads, brake rims, brake or clutch bands, drum flanges, sprockets, bearing boxes and the shafting of draw works and hoists, are listed in the accompanying table. It will be noted that most of these parts are somewhat bulky and for this reason they need not be extremely strong. Such a field is best covered by cast steel because special shapes can be attained easily, these materials are relatively strong, and they can be heat-treated to extreme hardness and wear resistance. Castings may be displaced to some extent by machine flame cutting and assembling by welding, for such services as sprockets, bearing boxes, brake rims, and drum flanges these parts can be assembled easily by welding, and the cost will be less, particularly if manufactured in small lots or to meet rapidly changing designs. The high-manganese steels, known as Hadfield's austenitic manganese steel, are used widely for these services not only because such steels are excellent materials for producing castings but because of their unique wear-resisting properties. Great tensile strength is not necessary for these materials (except shafts) because the parts are bulky and hence have ample strength even in the thinnest sections that are easily attained by casting.

Applications.—Catheads are used somewhat as a snubbing post and hence they must exhibit extreme wear-resistance or hardness. In addition to the alloy-steel castings recommended in the table, it is becoming more and more common to flame harden the surface of catheads by means of an oxyacetylene torch. Hardening is accomplished by heating the surface of the part to a quenching temperature at such a rate that the core of the part does not attain a high temperature, and then following the heating torch with a jet of air, steam or water to quench the part. The outside cools most rapidly, giving a hard skin or surface and the properties of the core are scarcely affected. Steels containing more than 0.4 per cent of carbon are necessary.

Brake and drum flanges must resist wear, galling, and heat checking. Much the same is asked of brake bands but in addition, the bands should exhibit some springiness so that they will not drag, but will disengage themselves from the brake drum. Thus, steels having a high elastic limit and some hardening constituent are recommended. Hardness and springiness may be attained by a relatively high-carbon content or by some element such as chromium. In addition to the steels listed in the table, a high-carbon nickel-molybdenum steel is also recommended for brake rims.

Sprockets are subject to unusual stresses because they are a loose-fitting type of gear—and in such a service the load is not always applied evenly or at the proper point. Such a service requires an exceedingly tough material and in this instance the sprockets must also be wear-resistant because of dirt and the extreme loads that are sometimes transmitted. Sprockets are now being manufactured for some services by the method of machine flame cutting. By such a method, the forged steel that is employed is usually more uniform and dependable material than steel castings.

The metals listed in this and other articles of this series are presented for the purpose of assisting in recognizing the services under which various oil equipment must operate. It is intended to aid in selecting suitable materials. The materials that are suggested have been taken from current literature and from manufacturing company bulletins. Other articles in the series to date are:

Portable Servicing	Aug. 10, 1939
Slush Pumps	Aug. 24, 1939
Rotary Chain	Sept. 7, 1939
Rotary Equipment	Sept. 28, 1939

Metallurgical Terms

Eutectoid Steel

The particular steel which contains 0.85-0.90 per cent carbon is referred to as eutectoid steel because the material contained in such a steel is pearlite, an eutectoid material which appears upon decomposition of austenite. The steels containing less than 0.85 per cent of carbon are referred to as "hypoeutectoid" steels and in general their properties may be said to be governed by the properties of pure iron and of pearlite. Those steels which contain a larger percentage of carbon are called "hypereutectoid" steels and their properties partake of the properties of pearlite and of iron carbide. The latter steels are not as widely used as the hypoeuctectoid steels because they are hard and brittle although many of the tool steels belong to this class.

The Bend Test

A test intended to show toughness and ductility in which a bar, wire, strip or other steel product or portion of a steel product, is subjected to bending stresses exceeding the yield point of the material. The bending operation is usually carried on until a definite angle of bend is obtained, or until the outer fibers of the bar fail. Bend tests are usually conducted by securing one end of the piece to be bent in a vise, but may be made by forcing the two ends of the bend specimen together with a testing machine, press, or steam hammer, in such a way that neither end is securely held. This latter type of bend test is known as a free-bend test.

Taken from A.P.I. Code No. 28.

METALS USED IN DRAW WORKS OR DRILLING HOIST

Part or service—	Material[1]	Approx. analysis, per cent[2] C	Mn	Cr	Ni	Mo	App. phys. prop. Y.P.[4]	Elong.	Brinell	Heat treatment	Ref. No.
Cathead	Cast 4140 steel	.4	.69	1.0	...	.25	70,000	17	220	Normalized and drawn	6
	Cast mang. steel	1.1	12.5	...	...	(Si 0.6)	35,000	50	[5]200	Soaked and quenched	34
Brake rims	Cast Ni-Mo steel	.2	.65	...	1.8	.32	65,000	22	...	Nor. 1,725° F. Drawn 1,200° F.	21
	Cast Ni-Mo steel	.2	.5	...	1.75	.25	62,000	23	...	Nor. 1,725° F.-Drawn 1,100° F.	11
	Cast nickel steel	.35	.9	...	3.0	...	60,000	18	...	Annealed	21
Brake or clutch bands	Cast 3140 steel	.4	.75	.6	1.25	...	60,000	20	...	Normalized and drawn	15
	Cast 6158 steel	.5	.45	1.05	...	(Va 0.15)	70,000	18	...	Double nor. and temp.	22
	Vanadium iron	3.1	...	.35	...	(Va 0.1)	60,000T.S.	...	240		22
	Cast mang. steel	1.1	12.5	...	...	(Si 0.6)	35,000	50	[5]200	Soaked and quenched	34
Drum flanges Sprockets	Cast Ni-Mo steel	.2	.65	...	1.8	.32	65,000	22	...	Normalized and drawn	18
	Cast 3140 steel	.4	.75	0.6	1.25	...	60,000	20	...	Normalized and drawn	15
	Cast nickel steel	.35	.9	...	3.0	...	60,000	18	...	Annealed	15
	Cast 4140 steel	.4	.8	1.0	...	.25	63,000	17	...	Normalized and drawn	6-21
	Cast 3140 steel	.4	.75	.6	1.25	...	60,000	20	...	Normalized and drawn	15
	Cast mang. steel	1.1	12.5	...	...	(Si 0.6)	35,000	50	[5]200	Soaked and quenched	34
Bearing boxes	Cast 3140 steel	.35	.75	.6	1.5	...	75,000	16	255	Normalized and drawn	19
Shafting	Wrought 4140 steel	.4	.75	.9	...	.2	100,000	16	300	O.Q. 1,575° F.-draw 1,100° F.	20
	3140-X3140	.4	.75	.6-.9	1.25	...	125,000	17	300	O.Q. 1,500° F.-draw 950° F.	19
	3245	.45	.45	1.0	1.25	...	140,000	18	330	O.Q. 1,450° F.-draw 1,000° F.	19
	2335	.35	.65	...	3.5	...	135,000	20	290	O.Q. 1,425° F.-draw 1,000° F.	19
Drive bushings	Cast mang. steel	1.1	12.5	...	...	(Si 0.6)	35,000	50	[5]200	Soaked and quenched	34

[1]Numbers used in this refer to the Soc. of Auto. Engs. numbering system. The analysis is usually modified somewhat for making castings. [2]Other elements as specified by S.A.E. or for similar steels. [3]Work hardens during service to a greater hardness. [4]Higher values of the yield point (130,000) are given by average data.

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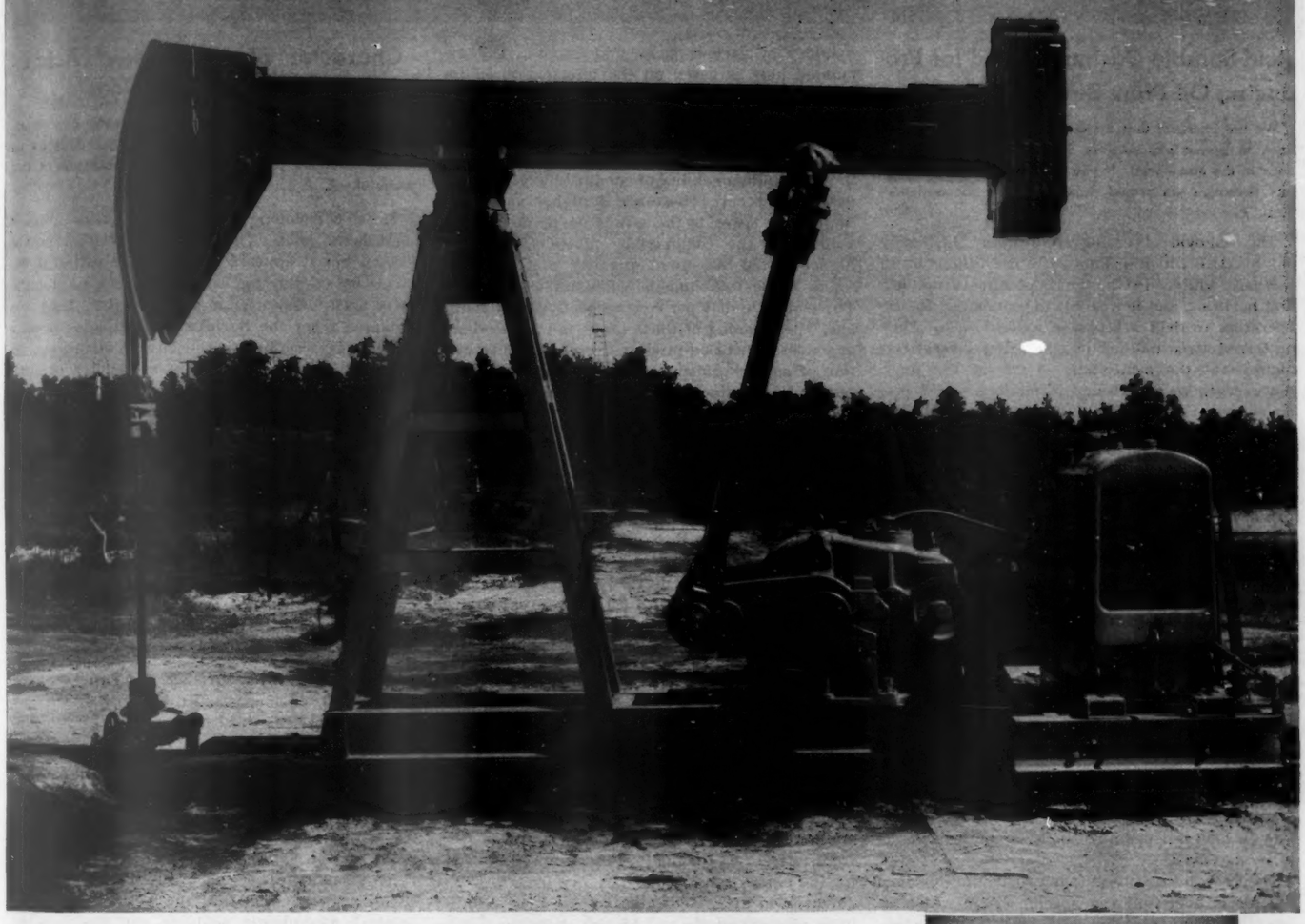
THEY'LL CONTINUE TO PAY DIVIDENDS



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It is significant that once an operator turns to quality-built Parkersburg Pumping Units he doesn't change back. It takes but little experience with these smooth-running, trouble-free units to find that the savings in down-time and repairs pay for them within a reasonable period. But, more important than that, their low operating cost helps to materially hasten the "pay-out" of your wells. Still more important is the fact that the dependable, long-life service of Parkersburgs means they'll continue to pump back dividends long after the investment is forgotten.

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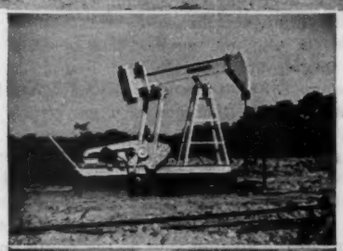

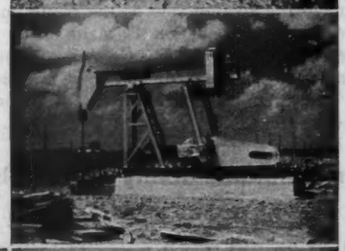

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Acid-Soluble Casing Utilized for Producing Oil From Several Formations

We are informed that a special soluble metal is being used to permit exposure to different producing formations in the same well. If you can supply the details of this operation we would appreciate the information.—F. D. P.

The removal of casing from wells chemically is a practice which originated in the Illinois basin this past winter. Production is obtained from several horizons, and it was felt uneconomical by the operators to drill a separate well to each. They preferred some method of producing several formations at the same time. Between the pays, however, there were found formations which produced water or caved, so it was essential that this intervening zone be properly shut off. Further, it was desirable that any pipe used in shutting off this intervening zone be the same size pipe as the upper string as this would permit a full-sized hole into the lower formation.

To solve this problem a special metal called Dowmetal is extruded to the desired dimensions and run as parts of the oil string, so placed that upon landing they are opposite the upper-producing zone. The entire string is then cemented in place. Then chemicals are run into the well through the tubing, forced to the bottom, and permitted to circulate up outside the tubing and inside the casing. The amount of acid required to remove the Dowmetal in the usual Illinois well is approximately equal to the volume of the well. Therefore, the acid was merely pumped down the tubing and permitted to circulate up the casing. This circulation process is continued from 6 to 10 hours, depending on the amount of metal to be dissolved.

The reaction involved is between inhibited hydrochloric acid and the special metal which is essentially magnesium with very small percentages of alloying metals. This reaction produces magnesium chloride and hydrogen. The magnesium chloride dissolves in the water from the acid and the hydrogen is a gas which does not go into solution.

The fluid and gas from the casing are run from the casing head to an open tank set a considerable distance from the well. The hydrogen escapes. A hose is placed at the bottom of this tank, and run to the suction side of the pump on the acid truck, and circulation is maintained. The hydrogen is vented a sufficient distance from the well and from the truck so that there will be no danger of explosion or fire because of this combustible gas.

Limits of Inflammability for Gasoline Vapors in Air

What are the most reliable percentage limits of inflammability or explosion for gasoline vapors when mixed with air?—G. F. C.

Many investigations have been made of mixtures containing gasoline and air to determine the hazardous conditions with respect to fires and explosions. The data are not always identical, apparently due to differences in conditions. The U. S. Bureau of Mines has made a review of all figures available in the literature relating to the inflammability of various gases and vapors. The discussion here is based on the information in the report relating to gasoline.

Inflammability and explosion limits of composition are considered to be the same. There are two extremes covering the range of percentages in which inflammability of combustible vapors and gases will occur. These are a higher and lower limit. The lower is the minimum percentage by volume of the combustible substance and the higher is the maximum quantity that has been found to be inflammable when mixed with air. These are 5 and 14 per cent respectively for methane. The meaning of these limits is that no flame or explosion will be produced, upon the introduction of a spark or small flame, when less than 5 per cent of methane is present in an air mixture, and a flame or explosion is to be expected when the volume is between 5 and 14 per cent. When the quantity is more than 14 per cent the mixture is combustible if in contact with external air.

Flame cannot travel downward when the upward movement of the gases is faster than the speed of flame in a mixture, as may happen near the quiescent limits of inflammability

Vapors were tested derived from a gasoline reported to have a gravity A.P.I. 73.8, initial boiling point 122° F., and final boiling point 284° F. The gasoline was apparently inspected prior to 1915, some years prior to the standardization of the distillation test, so the volatility of the gasoline of 73.8 gravity should be greater; the initial boiling point much lower. The limits found when tested in a glass jar were 1.45 per cent for the lower and 6.2 for the higher limit.

Limits, by others, working with a cylindrical bomb were 1.4 and 6.0 per cent. Five gasolines examined in small test tubes showed limits ranging from 1.24 to 1.64 for the low and from 5.42 to 7.88 for the high.

The lower limits, by weight, of the more volatile parts of a series of cracked and straightrun gasolines are equal.

Reference: H. F. Coward and G. W. Jones, Limits of Inflammability of Gases and Vapors, U. S. Bureau of Mines, Bull. 279, 1939.

Physical and Chemical Laws and Principles Used in the Petroleum Industry

DULONG AND PETIT'S LAW SPECIFIC HEAT AND THERMAL CAPACITY

Specific heat of a substance is its capacity to absorb heat. The unit for comparison is commonly that of water at 15° C. The specific heat for most substances is quite small, as illustrated by 0.1066 for steel, 0.222 for aluminum. The specific heats for most petroleum products fall between 0.45 and 0.60 for the temperature range 0 to 100° C.

Dulong and Petit discovered that the specific heat of an element is inversely proportional to its atomic weight. That the atomic heat, which is the product of specific heat and atomic weight, has a constant value generally between 5 and 7, for all elements. The figure 6.4 is convenient for making approximations. This law is limited to solid elements at temperatures well below the melting points.

Character of Naphthenic Acids, Separation and Uses

We are interested in refined and crude naphthenic acids and should be much obliged if you will let us know about the character, separation and use of this material.—E. A.

Most petroleum contains substances termed naphthenic acids. The exact composition is not known but it appears they may be carboxyl derivatives of the naphthenes, analogous to the fatty acids derived from the paraffins. They are obtained from the burning oil and low-viscosity lubricating fractions in the largest quantities, up to about 2 per cent, but are present in original oil in very small quantities, say a few hundredths of a per cent. The source material is the alkali wash after the acid treatment. The acids go into solution forming sodium soaps, from which they are separated by acidification.

Dilute alkali appears to produce naphthenic acids of greater purity than when the concentrated solutions are applied. Phenols and resins tend to dissolve in the strong alkali. Sulfur dioxide, fuming sulfuric acid and other chemicals are also used for the extraction. The acids are converted to calcium soaps in one method.

The original separation of naphthenic acids was by Zaloziecki, about 1892, from the kerosene acid sludge, which was distilled with steam, and the distillate treated with caustic soda solution. The acids were identified by conversion into salts and esters.

The acid sludge from a Rumanian oil was diluted with water, settled, and the tarry layer washed with water until free from acid, extracted with ether, dried with calcium chloride and evaporated in vacuo. The acid content, determined by titration, was applied to the acid value of the original naphthentic acids to the distillates as indicated in the table.

NAPHTHENIC ACIDS IN TAR AND DISTILLATES

	Specific gravity	Naphthenic acid in tar (per cent)	Naphthenic acid in distillate (per cent)
Tar	0.8225	3.13	0.00276
Tar	0.8655	4.37	0.00830
Tar	0.9152	1.68	0.23500

The original acid value of the distillates is not stated in the reference.

Many uses have been suggested for naphthenic acids, including washing delicate fabrics of wool and silk which are sensitive to alkali, disinfecting preparations, antiseptics, wood preservatives, varnishes, rubber substitutes, soaps, greases, insecticides, cutting oils, wool oils, etc. Much has been written about the naphthenic acids so the sources given here must be considered only a mention from the voluminous literature.

References: Gruse, Petroleum and Its Products. M. Naphtali, Chemie, Technologie und Analyse der Naphthensauren, Stuttgart, 1927. Gurwitsch-Moore, Petroleum Technology. Zaloziecki, Chem. Ziet., 905, 1892.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be included.

FIELD OPERATIONS

Summarizing the Week's Developments

KANSAS—The Trapp and Coralena pools in Russell County apparently were joined when a well ½ mile from production in both fields found oil in Arbuckle lime. Burrton pool was extended ⅛ mile eastward in Harvey County. A wildcat northeast of Arkansas City, Cowley County, gave promise of opening a Bartlesville-sand pool.

OKLAHOMA—A Booch-sand pool was opened in western Hughes County, southeast of Sasakwa area. The Cement field, Caddo County, was extended nearly 1 mile northwestward. A deeper pay zone for the Langston pool, Logan County, was uncovered in Simpson formation.

TEXAS: Gulf Coast—Distillate production at 10,460 ft. was opened in Brazoria County by Glenn McCarthy.

Southwest Texas—Victoria County has a new gas field 4 miles west of the Coletto Creek field. Wildcats in San Patricio, Goliad and Jim Wells counties were close to completion, and were being closely watched.

West Texas—Permian-lime pay in the Tubbs area in Crane County was extended 2½ miles. The Ordovician pay in the Big Lake field in Reagan County was extended a little northerly by a well flowing 134 bbl. in 3 hours.

West Central Texas—The first production in Nolan County was recorded in a Strawn test in Section 43, Block 19, T.&P. Survey. Shackelford County is to have a 4,800-ft. Ordovician test. The Griffin pool in Jones County was extended westerly.

North and East Texas—A Strawn-sand test to 5,000 ft. will be drilled in Archer County on the Falls County school land, and location for a deep test has been made in Montague County. In eastern Texas three locations have been made for Woodbine-sand tests in the Grapeland area in northern Houston County. Wildcat locations have been made in Limestone, Red River and Van Zandt counties.

LA-ARK-TEX—Tertiary Wilcox sand, uncovered in the Bancroft field, Beauregard Parish, South Louisiana, was being tested. It is in the 11,000-ft. horizon. Wildcats in Plaquemines, Jefferson and St. John parishes are showing encouragingly. The Experiment pool in Arkansas has been renamed Dorcheat. A deep well in the old Elm Grove field in Bossier Parish, North Louisiana, given a drill-stem test, showed 4,000,000 cu. ft. of gas, salt water and a little heavy crude oil.

ILLINOIS—New operations in the state numbered 120 last week, a new high record. Production continued upward averaging 344,267 bbl. per day. The Keensburg town-lot pool in Wabash County had 12 new oil wells last week, averaging 200 bbl. per well.

CALIFORNIA—The Coalinga field was extended 2,000 ft. by a 2,000-bbl. well of Standard Oil Co. The drilling peak in the Montebello field has been passed, but 45 rotaries are still active, 17 of them below 7,000 ft.

WYOMING—A well on a doubtful location in the Lance Creek field came in flowing 1,894 bbl. a day from the Leo sand.

Completions in All Fields

(Week Ending September 30, 1939)

	Oil	Gas	Dry	Total	1939 total comp. to date	1938 total comp. to date
N. Y., Pa., and W. Va.	59	12	5	76	2,405	2,811
Ohio	6	11	11	28	737	754
Indiana	10	0	3	13	221	71
Kentucky	10	0	2	12	509	671
Illinois	55	1	12	68	2,664	1,156
Michigan	13	0	17	30	1,064	649
Kansas	27	0	6	33	980	1,225
Oklahoma	17	1	8	26	1,336	1,314
Texas:						
North Central Texas	34	2	17	53	1,781	2,406
West Texas	36	0	3	39	1,395	1,496
Texas Panhandle	6	0	1	7	308	434
East Texas	3	0	0	3	320	1,457
East Central Texas	3	1	1	5	206	271
East Texas Border	0	0	0	0	55	109
Gulf Coast Texas	8	5	5	18	1,004	1,008
Southwest Texas	12	2	4	18	1,692	1,591
Total Texas	102	10	31	143	6,761	8,772
North Louisiana	7	1	0	8	393	491
Gulf Coast Louisiana	15	0	5	20	473	360
Total Louisiana	22	1	5	28	866	851
Arkansas	4	0	1	5	198	184
Montana	2	0	0	2	118	81
Wyoming	1	0	0	1	92	118
Colorado	1	0	0	1	10	9
New Mexico	9	1	2	12	437	425
Utah	0	0	0	0	0	2
California	12	1	6	19	695	989
Total United States	350	38	109	497	19,093	20,082
Total previous week	393	48	117	558		
Week ending Oct. 1, 1938	381	40	122	543		

Outstanding Fields—Highlights

(Week Ending September 30, 1939)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	27	41	3	1,600	1,136	25,400
Wasson-Bennett	19	59	11	12,176	439	21,568
Ector County	14	62	7	7,883	1,847	65,186
Pecos County	11	30	2	360	1,188	36,889
Jones County	9	23	3	698	568	7,200
East Texas	9	26	3	191	26,088	491,798
OKLAHOMA						
St. Louis	5	23	3	1,888	890	26,700
KANSAS						
Barton County	3	14	3	2,912	486	13,445
Ellis County	4	14	4	3,500	428	9,055
Rice County	3	16	9	4,110	1,362	26,465
Russell County	8	26	7	2,842	1,324	24,850
NEW MEXICO						
Lea County	7	46	6	1,911	2,253	88,840
LA-ARK-TEX						
Magnolia, Ark.	1	9	2	1,810	67	16,415
Cotton Valley, La. (deep)	3	7	3	1,110	142	9,575
MICHIGAN						
Freeman-Redding	3	16	1	666	113	13,836
Van Buren County	4	20	1	25	280	13,320
Kent County	7	45	9	5,575	145	9,516
CALIFORNIA						
Wilmington	3	17	2	1,001	711	86,250
ILLINOIS						
Salem	8	92	20	6,662	1,328	200,485
Louden	9	68	7	3,250	1,095	65,440
Other basin areas	37	260	28	5,046	1,676	69,242
Old fields	....	....	....	....	....	9,100

Illinois, Indiana and Kentucky

By STAFF CORRESPONDENT

120 Operations Started in Illinois; 40 in Louden Field

MATTOON, Ill., Oct. 2.—All records of new work started in one week in the Illinois fields were broken last week when 120 new locations, rigs up and wells drilling were announced. Forty of these were scheduled for the Louden field in Fayette County, where Carter Oil Co. is the largest operator; 15 in the Salem field, in Marion County, where Texas Co. is the principal producer, but where Magnolia Petroleum Co. is also a large factor. Fourteen new operations were reported for Wabash County, one of the newer, and most active, fields in the state, the remainder were scattered through 16 counties.

Production rose to 344,267 bbl. per day as an average for the week of which Salem is credited with 200,485 bbl., Louden with 65,440 bbl., and the other basin fields with 69,242 bbl. The old fields were estimated at 9,100 bbl.

There were 68 completions, 55 of which were oil wells, 1 a gas well, and 12 dry holes. The failures were one each in Clark, Coles, Jasper, Lawrence, Richland, Edwards, and Washington counties, three in Marion County, and two in Wabash County.

Seven new oil wells in Fayette County were credited with an initial production of 3,250 bbl.; 3 in Clay, 249 bbl.; 20 in Marion, 6,662 bbl.; 19 in Wabash, 4,030 bbl.; 3 in Wayne, 469 bbl.; 1 in Edwards, 130 bbl., and 2 in Washington, 168 bbl. Total initial production was 14,958 bbl.

The Keensburg townsite pool in Wabash County now has 25 oil wells, all on the pump, with about as many more in the drilling stage. Five dry holes have been abandoned in and near the townsite. An average of 18 tank cars per day move the production out of the pool. Last week 12 oil wells and 2 dry holes were completed in the Keensburg area, which lies in the SW¼ Section 9-2s-13w. The oil wells ranged from 45 bbl. to 350 bbl. a day in initial production, and averaged 200 bbl. per well. The dry holes were in the extreme southern end of the quarter section. One found no Cypress sand, the usual pay formation, and plugged back into sulfur water. The other was dry in all formations down to and including the McClosky lime.

In Franklin County Phillips Petroleum Co.'s No. 1 Boyles, C NE NW SW Section 19-5s-3e, an offset to the Gulf Refining Co.'s discovery well, pumped 10 bbl. of oil and 252 bbl. of water following a third acid treatment. Gulf Refining Co.'s No. 2 U. S. Fuel, NW NE NE Section 32-5s-3e, 1½ miles from the Phillips Petroleum Co.'s No. 1 Boyles, was drilling at 4,100 ft. and may be drilled to the Devonian lime.

In Clark County D. R. Gooch and others' No. 1 Davis, NW cor. SE SE SE Section 17-19n-13w, dry and abandoned at 737 ft.

In Coles County C. D. Reynolds' No. 3 Griffin, NW SE NE Section 22-11n-10e, abandoned at 595 ft., with no showing.

In Jasper County Kirk D. Holland's No. 1 fee, NE SW SE Section 7-8n-11e, Fredonia lime at 1,905 ft., total depth 1,957 ft., dry and abandoned.

Fayette County

In Fayette County Carter Oil Co.'s No. 9 Ireland, SE SW NW Section 33-8n-3e, total depth 1,587 ft., shot twice with 40 qt., flowed 684 bbl. and 175,000 cu. ft. of gas. Carter's No. 6 Dial, SW SE NW Section 33-8n-3e, total depth 1,578 ft., shot with 20, 20, and 40 qt., swabbed 654 bbl. Carter's No. 2 Kline, SW NW NE Section 23-8n-3e, total depth 1,561 ft., shot with 20 qt. at 1,460-66 ft., swabbed 480 bbl. and 250,000 cu. ft. of gas. Carter's No. 6 Ramsey-Hopper, SE SE SW Section 5-7n-3e, shot with 20 qt. at 1,568-74 ft., 40 qt. at 1,539-54 ft., and 10 qt. at 1,518-21 ft., swabbed 668 bbl. and 75,000 cu. ft. of gas. Carter's No. 3 Finch, SE NE SW Section 4-7n-3e, ripped casing at 1,495-1,520 ft. after shooting with 20 qt. at 1,567-70 ft., swabbed 196 bbl. and some gas. Carter's No. 2 M. Finch, SW NW SE Section 4-7n-3e, drilled to a depth of 1,577 ft., plugged back to 1,544 ft., swabbed 40 bbl. per day after a 20-qt. shot. Carter's No. 9 Durbin, NE NW SW Section 4-7n-3e, total depth 1,572 ft., ripped casing at 1,494-1,505 ft., swabbed 528 bbl. and 20,000 cu. ft. of gas. Union Products Petroleum Co.'s No. 3 Ada Morrison, NE cor. SW SW Section 8-7n-3e, deepened and shot with 30 qt. at 1,544-57 ft., swabbed 18 bbl. per hour, estimated good for 425 bbl. per day.

In Lawrence County Joe Kesl and others' No. 3 Gillespie, NE cor. SW NW Section 24-4n-11w, dry and abandoned at 1,771 ft. Joe Kesl's No. 1 Bryan, C SW NW Section 17-4n-10w, Bridgeport sand at 804 ft., Buchanan sand at 1,063 ft., total depth; 11,000,000 cu. ft. of gas.

Illinois Fields

HIGHLIGHTS OF THE WEEK: Sohio Corp.'s 10-in. pipe line from the Salem field in Marion County, to Stoy in Crawford County is being laid in Richland County, and it will not be long before it will be connected at Stoy with the old Tide Water line which runs eastward to Rixford, Pa., and which Sohio recently acquired so that it could deliver its Illinois crude directly to the Standard Oil Co. of Ohio refinery in Cleveland. Sohio has been moving oil through the Wabash, Pure and Illinois lines to reach its eastern customers. The Keensburg townsite pool in Wabash County completed 12 oil wells last week but 2 dry holes cut off the pool to the south. A total of 120 new operations in the state established a new record.

Average daily production of new pools, 335,167 bbl.; old pools, 9,100 bbl.; total, 344,267 bbl.

Oil wells completed, 55; operations, including locations, rigs and wells drilling, 511.

In Richland County Pure Oil Co.'s No. 1 Coen, C E½ SE NE Section 2-4n-9e, Ste. Genevieve lime top at 2,905 ft., dry and abandoned at 3,052 ft.

In Clay County J. B. Barnes' No. 1 Devore, SE NE NE Section 13-3n-6e, total depth 2,969 ft., treated with 1,800 gal. of acid, a 10-qt. shot of nitroglycerin and 1,000 gal. of acid, pumped 6 bbl. of oil and 25 bbl. of water from pay at 2,954-58 ft. Andy Bruner's No. 3 Bothwell, SE SE NE Section 24-2n-7e, Fredonia lime pay at 2,992-3,010 ft., flowed 110 bbl. per day. Andy Bruner's No. 1 Bothwell, SE NE SE Section 24-2n-7e, Roseclaire lime at 2,958 ft., pay at 3,063-76 ft., acidized with 3,000 gal., pumped 133 bbl. of oil.

In Marion County Quisenberry's No. 1 Hawkins, NW NW NW Section 32-1n-4e, old well deepened from 2,948 ft. to 2,998 ft., dry and abandoned.

Wabash County

In Wabash County Continental Oil Co.'s No. 4 Schauf, SE NE SW Section 30-2s-13w, Cypress sand top at 2,473 ft., total depth 2,478 ft., pumped 15 bbl. of oil and 35 bbl. of water. Bartlett's No. 3 Stansfield, NW NE NE Section 30-2s-13w, Biehl sand at 1,725-34 ft., pumped 90 bbl. Vickers and others' No. 1 Bump, S½ NW NE SW Section 9-2s-13w, Cypress at 2,421-37 ft., pumped 166 bbl. J. M. Roberts' No. 1 Phebus, SE NE SW Section 9-2s-13w, Cypress at 2,434-54 ft., shot with 10 qt., pumped 300 bbl. Roberts Brothers' No. 1 Parmenter, NE cor. NW SE SW Section 9-2s-13w, Cypress at 2,430-52 ft., pumped 250 bbl. Roberts Brothers' No. 1 LeGier, NW cor. SE SW Section 9-2s-13w, Cypress at 2,429 ft., shot with 20 qt. at 2,450-58 ft., pumped 350 bbl. Potter & Bialock's No. 1 Fitzgerrel, NW SE SW Section 9-2s-13w, Cypress at 2,442-50 ft., pumped 100 bbl. Olin & Hayes' No. 3 N.Y.C.R.R., SW NE SW Section 9-2s-13w, Cypress at 2,420-37 ft., pumped 210 bbl. Olin & Hayes' No. 2 N.Y.C.R.R., SW SW SW Section 9-2s-13w, Cypress at 2,420-34 ft., shot with 5 qt., pumped 45 bbl. in 3 hours and pumped off. Harry Fotiades' No. 1 Lambert, SE SE SW Section 9-2s-13w, Cypress at 2,440-60 ft., pumped 30 bbl. Fotiades' No. 1 LeGrier & Grace, NE cor. SW SE SW Section 9-2s-13w, Cypress at 2,448-71 ft., pumped 250 bbl. Doc Dallas and others' No. 1 Beard, N½ NE SE SW Section 9-2s-13w, Cypress at 2,437-52 ft., pumped 255 bbl. Brown & Richardson's No. 1 Kennard, NE SE SW Section 9-2s-13w, Cypress at 2,432-65 ft., pumped 220 bbl. A. F. Anding and others' No. 1 F. D. Nash, NW SE SW Section 9-2s-13w, Cypress at 2,438-64 ft., pumped 140 bbl. Chisom & Whisdom's No. 1 Floyd, CSL SW¼ Section 9-2s-13w, total depth 2,473 ft., Cypress sand missing, plugged back to 1,870 ft. and set 5½-in. casing at 1,840 ft. When plug was drilled the hole filled with water and was abandoned. Manley Oil Co.'s No. 1 Waddle, SW SW SW Section 9-2s-13w, total depth 2,822 ft., dry and abandoned. Cypress sand at 2,404-27 ft. had a showing of oil; Benoist sand topped at 2,560 ft. had a showing; Fredonia lime was topped at 2,725 ft.; there was no McClosky pay. Centralia Refining Co. abandoned its location for No. 1 R. F. Rose, SE SW SW Section 9, and Knight abandoned location for No. 1 Hoffman, SW NW NE Section 9, both in the Keensburg area.

Phillips Petroleum Co.'s No. 8 Schultz, in Section 7-3s-13w, Cypress sand at 2,501-32 ft., flowed 519 bbl. Phillips Petroleum Co.'s No. 6 Schultz, in Section 7-3s-13w, Cypress sand at 2,496-2,530 ft., swabbed 167 bbl. of oil in 10 hours. Phillips Petroleum Co.'s No. 5 Schultz, NE SW SW Section 7-3s-13w, Cypress sand at 2,502-26 ft., shot with 15 qt., swabbed 350 bbl. T. F. Morrow's No. 2 Cox, NE NW NE Section 6-4s-8e, Aux Vases sand at 3,228-50 ft., pumped 120 bbl. of oil. A. F. Anding's No. 1 Belva, NE NE NW Section 6-4s-8e, Aux Vases at 3,234 ft., total depth 3,274 ft., pumped 103 bbl. in 14 hours.

In Edwards County Kingwood Oil Co.'s No. 1 Helm, NE NE NW Section 18-3s-14w, Ste. Genevieve lime top at 3,074 ft., pay at 3,131-38 ft., acidized with 2,000 gal. through perforations, pumped 130 bbl.

In Wayne County Riley & Lacey's No. 1 Danby, SE SW NE Section 31-3s-8e, Aux Vases sand at 3,210 ft., total depth 3,260 ft., flowed 253 bbl. naturally in 24 hours. Rockhill Oil Co.'s No. 5 Twist C, C W½ SW SE Section 5-3s-7e, McClosky pay at 3,340-46 ft., flowed 116 bbl. in 16 hours through casing. Illinois-Mid-Continent Oil Co.'s No. 1 Harris, NW SE NE Section 3-3s-8e, Ste. Genevieve lime top at 3,385 ft., pay at 3,473-85 ft., pumped 100 bbl. of fluid per day, 50 per cent water. Texas Co.'s No. 3 J. Boggs, NE NE SW Section 5-3s-7e, dry and abandoned at 3,502 ft., after a drill-stem test at 3,359-75 ft., developed 15 ft. of oil and 65 ft. of sulfur water.

In Bond County Jenkins and others' No. 1 White, SW SE NW Section 17-5n-4w, dry and abandoned, hole

full of water at a total depth of 2,106 ft. Devonian lime was topped at 2,044 ft.

Marion County

In Marion County Ned Easley's No. 1 Humes, NW NE NE Section 13-3n-2e, McClosky lime at 2,453-66 ft., total depth 2,509 ft., dry and abandoned. Harvey Oil Co.'s No. 5-A Kagey, trustee, SW cor. NE SE Section 33-3n-2e, in the Tonti pool, Benoist sand at 1,950-63 ft., pumped 140 bbl. Thompson Drilling Co.'s No. 1 Craig, NE NE NE Section 36-2n-1e, McClosky lime at 2,078-83 ft., total depth 2,089 ft., pumped 98 bbl. Ed Hollman's No. 1 Bedwell, NE NW NW Section 5-2n-2e, St. Louis lime topped at 2,330 ft., total depth 2,359½ ft., dry and abandoned. Kingwood Oil Co. and Bell's No. 3 Shanafelt, SW SE NW Section 16-2n-2e, shot with 20 qt. in Benoist sand at 1,846-66 ft., flowed 615 bbl. in 10 hours, or at the rate of 1,476 bbl. per day. Texas Co.'s No. 11 Ed Tate, NW SE SW Section 31-2n-2e, McClosky lime at 1,995-98 ft. and 2,048-63 ft., flowed 159 bbl. in 3 hours, rated at 1,113 bbl. a day. Blackstock's No. 4-B M.&I.R.R., NW SW NE Section 20-2n-2e, McClosky lime at 1,950 ft., total depth 2,067 ft., pumped 200 bbl. Shell Oil Co., Inc.'s No. 2-B Salem State Bank, NW NW SE Section 20-2n-2e, shot with 20 qt. at 1,840-58 ft., flowed 570 bbl. Shell's No. 7 Salem State Bank, SW NW SE Section 20-2n-2e, Aux Vases pay at 1,787-1,800 ft. and 1,812-52 ft., shot with 25 qt., flowed 690 bbl. Magnolia Petroleum Co.'s No. 61 Young, SW SE NW Section 28-2n-2e, McClosky lime at 1,963 ft., 50 ft. of streaked saturation, total depth 2,080 ft., acidized with 3,000 gal., flowed 300 bbl. Magnolia Petroleum Co.'s No. 22 S. D. Shanafelt, SW SE SW Section 29-2n-2e, McClosky lime at 1,895-2,020 ft., acidized with 4,000 gal., flowed 1,560 bbl. Texas Co.'s No. 4 W. Frederick A, SE NW SW Section 29-2n-2e, McClosky top at 1,917 ft., pay at intervals to 2,050 ft., flowed 163 bbl. in 3 hours, rated at 1,141 bbl. per day. Texas Co.'s No. 9 Dunning, NE SE SE Section 30-2n-2e, McClosky pays at intervals 1,923 to 1,985 ft., flowed 153 bbl. in 3 hours, rated a 1,071-bbl. well. Texas' No. 3 Maxwell B, SW NE SE Section 30-2n-2e, shot in Benoist and Aux Vases sands 1,787 to 1,857 ft., flowed 204 bbl. in 3 hours, rated at 1,428 bbl. a day. Texas Co.'s No. 12 Camill, NW SW SE Section 31-2n-2e, McClosky pay at 1,890-1,902 ft., acidized with 2,000 gal., flowed 98 bbl. in 3 hours, rated at 686 bbl. per day. Texas' No. 16 K. Wayman, NE NE NE Section 31-2n-2e, McClosky pay at 1,901-05 ft. and 1,914-30 ft., acidized with 2,000 gal., flowed 65 bbl. in 3 hours, rated at 455 bbl. per day. Texas' No. 5 Farthing, C W½ NE SW Section 33-2n-2e, McClosky at 2,046-82 ft., flowed 150 bbl. in 3 hours rated at 1,050 bbl. a day. Texas' No. 6 Sands, NW NW SW Section 33-2n-2e, McClosky pays at intervals, 2,012 to 2,076 ft., flowed 42 bbl. in 3 hours, rated at 294 bbl. a day. Wiser Oil Co.'s No. 9 Weems, NW NW NW Section 33-2n-2e, McClosky pays at intervals, 1,949-2,029 ft., flowed 20 bbl. in 1 hour, acidized with 6,000 gal., it flowed 1,000 bbl. in 24 hours. Texas Co.'s No. 7 Heydrick, NW SW SE Section 4-1n-2e, Benoist sand at 1,865-81 ft., pumped 13 bbl. in 3 hours, rated at 91 bbl. a day. Texas' No. 4 W. B. Carr B, SW NE NE Section 7-1n-2e, shot with 90 qt. in Benoist and Aux Vases sands, 1,746 to 1,836 ft., flowed 414 bbl. in 3 hours, rated at 2,892 bbl. a day. Texas' No. 2 Meyer, NW NW NE Section 17-1n-2e, Benoist sand at 1,886-1,904 ft., pumped 28 bbl. in 3 hours, rated at 196 bbl. a day.

In Washington County Shell Oil Co., Inc.'s No. 3 Sharbowski, SW NE NW Section 23-3s-3w, Benoist sand at 1,267-75 ft., shot with 21 qt., pumped 95 bbl. Shell's No. 6 Xozuszek, SW SW NW Section 23-3s-3w, Benoist sand shot with 21 qt. at 1,284-91 ft., pumped 73 bbl. Watson and others' No. 1 T. Clay, SW NW SW Section 8-4s-1w, Ste. Genevieve lime at 1,485 ft., total depth 1,604 ft., dry and abandoned.

New Wildcats

Among the 120 new operations reported in the past week were the following first reports on wildcats:

In Effingham County N. M. Downing and others' No. 1 J. Henry Alwerdt, NW NW SE Section 8-6n-5e, drilling at 930 ft., with rotary. Phillips Petroleum Co.'s No. 1 Overbeck, 571 ft. north and 491 ft. west, C Section 31-8n-7e, drilling at 772 ft.

In Lawrence County Bell Oil Co.'s No. 1 Wright, NE NW SE Section 21-2n-13w, set 10-in. casing at 90 ft.

In Edwards County H. & K. Drilling Co.'s No. 1 Boster, NW NW NE Section 3-3s-14w, drilling at 1,100 ft.

In Jefferson County Oils, Inc.'s No. 1 Mace, NE SW SW Section 34-3s-3e, rig up.

In Wayne County H. H. Weinert's No. 1 Curd, NW SW NE Section 29-3s-8e, drilling at 325 ft. A. B. Cobb's No. 1 Charles Gill, NE NE SW Section 20-3s-8e, rig up.

In White County Kingwood Oil Co.'s No. 1 Seifreid, NW SE SE Section 30-3s-11e, location. Ivan White and others' No. 1 Ford and others, C W½ NW NE Section 34-4s-14w, rig up. Superior Oil Co.'s No. 2 Ford and others, 2,386 ft. from east and 1,650 ft. from south lines, NE¼ Section 9-5s-14w, rig up. Penn-Illinois Oil Co.'s No. 1 Porter, C E½ NE SE Section 12-6s-8e, rig up. Tatum and others' No. 1, NE SW SW Section 23-6s-9e, rigging up rotary.

In St. Clair County A. Hemper and others' No. 1 Southern Coal Co., C NE NE Section 21-1n-6w, rigging up machine. L. A. Painter's No. 1 H. C. Petri, 636 ft. from north and 458 ft. from west lines, SE¼ Section 28-2s-6w, drilling at 345 ft.

In Perry County Cochrane and others' No. 1 Pyramid Coal Co., NE NW SE Section 35-5s-3w, moving in machine. Gilliam and others' No. 1 Brostmeyer, SW SE NE Section 5-5s-3w, moving in rotary.

In Franklin County W. R. Hayes' No. 1 Old Ben Coal Co., SE SW SE Section 26-5s-1e, drilling at 620 ft.

In Pike County West Pike Development Co.'s No. 1 Reinhard, NW cor. NE NW NE Section 35-4s-7w of fourth principal meridian, drilling at 55 ft.

In Edgar County Sanders' No. 1 Weaver, NW NW NW Section 24-14n-14w of second principal meridian, shows of oil at 157 ft. and 242-46 ft., total depth 261 ft., shutting off water that broke in at 214 ft. Phillips and Lewellen's No. 1 Emma Six, SW SW SW Section 13-14n-14w, dry and abandoned at 259 ft.

Among the Outposts

In Menard County William Johnson was drilling at 990 ft. in No. 1 Johnson, SE NW NE Section 26-19-5w.

In Fulton County I. H. Spiker's No. 1 fee, CNL NE NE Section 3-7n-1e of fourth principal meridian, drilling at 150 ft.

In Coles County Dougherty & Dunn's No. 1 Mitchell, NE cor. SE NE SW Section 24-11n-10e, drilling at 150 ft.

In Clark County Patman Producing Co.'s No. 1 Ingersol, NW SW SE Section 29-11n-14w, plugged back from 1,117 ft. to 1,058 ft., and cleaning out.

In Marion County Dunbar & Wingate's No. 1 France, NE NW SW Section 1-4n-4e, drilling at 1,725 ft. Ray Farrier's No. 1 Balke, SW SW SW Section 21-4n-4e, drilling at 1,275 ft. McMakin's No. 1 Ewing and others, NW SE SW Section 6-2n-3e, drilling at 1,435 ft.

In Edwards County C. G. McFaddin's No. 1 Bump, NE SE SW Section 34-2s-14w, total depth 2,642 ft., swabbing through tubing. Longhorn Oil Co.'s No. 1 Kraft, SW NW SW Section 31-2s-14w, bailing salt water with a showing of oil. H. K. Riddle's No. 1 Schroeder, SW SE SW Section 22-2s-14w, Fredonia lime top at 2,905 ft., total depth 3,082 ft., running Schlumberger tester. Olin & Hayes' No. 1 N. Y. Central, N½ NE SE SW Section 34-2s-14w, total depth 2,634 ft., testing.

In Wabash County Nash, Redwine & Co.'s No. 1 Schultz, Section 10-3s-14w, drilling at 2,045 ft. Magnolia Petroleum Co.'s No. 1 Ethridge, S½ SW NW SW Section 18-3s-14w, re-treated with 2,000 gal. with a 130-bbl. oil load, swabbed down, will put on the pump, total depth 3,140 ft., plugged back from 3,190 ft.

In White County Kingwood Oil Co.'s No. 1 Fearn, SW NE NW Section 19-3s-11e, drilling at 475 ft. Kingwood Oil Co.'s No. 1 Metcalf, SW NE SW Section 31-3s-11e, drilling at 868 ft. Pace & German's No. 1 Hon, SW SW SW Section 33-3s-14w, drilling at 2,400 ft.

INDIANA

EVANSVILLE, Ind., Oct. 2.—A 1,200-bbl. well in Posey County, and a 900-bbl. on the same lease, together with several wells ranging from 43 bbl. up to 460 bbl. per day in Gibson County, made up a total of 10 new oil wells in the state in the past week. Three wildcat dry holes were completed in Perry, Tipton and Delaware counties.

Completed Wells

In Knox County Midwest Development Co.'s No. 1 Frey, SE SE SW Section 11-2n-11w, total depth 2,018 ft., in Mississippi lime, was pumping 16 bbl. of oil and 7 bbl. of water, settled production.

In Perry County Charles E. Dice's No. 2 Knable, NW cor. SE SW NW Section 17-6s-3w, was dry and abandoned at 625 ft.

In Vanderburg County J. R. Ruskes' No. 1 Poole, NE cor. NW SW Section 31-5s-11w, shot with 80 qt. at 1,215-35 ft., produced 18 bbl. in 24 hours.

In Gibson County Lane & Grey and others' No. 1 McCarthy, NW SW NE Section 13-2s-11w, an old well plugged back from 2,200 ft. and shot in sand at 1,812-21 ft., is estimated good for 40 bbl. a day but has a fishing job.

In Tipton County Fred W. Eastman's No. 1 Vandeventer, SE SW NE Section 21-21n-3e, had a hole full of salt water in St. Peter sand at 1,490-95 ft., total depth, and it was abandoned.

In Delaware County W. E. Black's No. 1 Thomas, SW NW NE Section 10-22n-10e, had top of the Trenton lime at 958 ft., and a hole full of water at 1,495 ft., total depth 1,500 ft., abandoned.

In Gibson County Continental Oil Co.'s No. 4 Cooper, NE SW SE Section 12-3s-14w, water at 2,878-79 ft., total depth; set 5½-in. casing at 2,862 ft., and perforated it at 2,134-52 ft. with 28 shots. Well pumped 43 bbl. of oil the first 24 hours. Lewis Production Co.'s No. 2 Cooper D, NE SE NW Section 13-3s-14w, flowed 460 bbl. in 24 hours from pay at 2,856-72 ft. Papoose Oil Co.'s No. 1 Cooper (Taylor), SW SE SW Section 13-3s-14w, sand at 2,506-17 ft., estimated good for 200 bbl. a day. Papoose's No. 2 Cooper (Taylor), SE SW SW Section 13-3s-14w, sand at 2,485-2,505 ft., flowed 300 bbl. in 10 hours, then 138 bbl. in 3 hours. Lewis Production Co.'s No. 2 Cooper C, SW NE NW Section 24-3s-14w, sand at 2,504-19 ft., flowed 235 bbl. in 8½ hours through open tubing.

In Posey County Superior Oil Co.'s No. 8 New Harmony, SW SE NE Section 9-5s-14w, estimated good for 1,200 bbl. per day from sand at 2,158-2,208 ft. The company's No. 9 New Harmony, with sand at 2,163-2,224 ft., is estimated at 900 bbl. a day. Lack of storage on the lease prevented a prolonged test of these wells.

In Spencer County Damron Brothers were drilling at 300 ft. in No. 1 Howard, SW SE SE Section 35-7s-7w. Kelly and others had three string of tools in the hole in No. 1 Niles, SE SW SE Section 35-7s-7w, and were fishing. W. C. Pollick and others were drilling at 400 ft. in No. 1 Bettie Hazen, C S½ NW NW Section 19-7s-6w. Kentucky Natural Gas Co. was drilling at 642 ft. in No. 1 Houghland, C NE SE Section 19-7s-6w. Damron Brothers' No. 1 Crowder, C NE NE Section 18-7s-6w, was drilling at 1,610 ft. Major Oil Co.'s No. 1 Haynes, SE SE NE Section 11-6s-7w, shut down at 1,000 ft. D. P. Hynes' No. 1 Varner, NE NE SW Section 24-6s-5w, shut down at 1,061 ft. J. S. Albertson's No. 1 Roy, SW NE SE Section 11-6s-4w, location. Sunshine Oil Co.'s No. 1 Trent, NE SW SE Section 11-5s-6w, underreaming 8-in. casing at 965 ft.

In Warrick County Hoosier Drilling Co.'s No. 1 Baum, SW SE NW Section 9-6s-7w, top of Ste. Gene-

(Continued on Page 84)

WESTERN KENTUCKY

OWENSBORO, Ky., Oct. 2.—Phillips Petroleum Co.'s deep test in Hopkins County was reported dry. It will be plugged back to the McClosky lime and tested with acid. It was drilled to 4,921 ft. A 50-bbl. well in McClosky lime in the Utica district, Daviess County, was the best of the few wells completed in the past week in western Kentucky.

Breckenridge County, McQuady district: Charles Stewart's No. 2 Anna Howard, drilling at 175 ft. Glen Dean district: Jack Cooper's No. 7 E. Moorman, 5-bbl. well in Barlow sand, total depth 344 ft.

Christian County, 5 miles northwest of Hopkinsville: Dr. W. L. Woods' No. 1 Woods, drilling at 198 ft.

Daviess County, Handyville district: W. E. Hupp's No. 1 Lula Akin, drilled deeper from Jett sand at 1,213 ft. through McClosky sand, dry and abandoned at 1,872 ft. J. C. Miller, trustee's No. 2 Major Oil Co.'s Burns tract, location. A. Teller, trustee's No. 1 B. E. Conner, shot Jett saturation into water; will drill deeper. Pellville district: Wilson and others' No. 1 Mrs. C. A. Gilmore, drilling at 300 ft. Birk City district: Jess Ashby's No. 2 Laura Hagan, rigging up. Utica district: Stewart, Snyder and others' No. 2 Dr. A. A. Westerfield, drilled 1 ft. into McClosky sand; total depth 1,765 ft., flowed 50 bbl. a day, naturally.

Hopkins County, 3 miles northeast of Hanson: Phillips Petroleum Co. and others' No. 1 Ben Parker, reported as a dry hole, total depth 4,921 ft.; will be cleaned out and acidized with 1,000 gal. in McClosky lime.

Ohio County, Narrows district: Joiner and Levine's No. 8 Sam Davidson, estimated 15 bbl. a day from McClosky lime, total depth 703 ft. Adaburg district: Henry Scholl and others' No. 6 J. T. Hickey, 10-bbl. well in Jett sand, total depth 660 ft. Four miles south of Dundee: J. A. Wallace's No. 1 R. B. Schroeder, dry

(Continued on Page 77)

That question still persists—even in the refinery industry. The life of a refinery tube is dependent upon the kind of a tube you use, the quality of the tube, the temperature to which the tube is subjected and the pressure exerted upon the tube.

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Oklahoma Operations

By
DAL DALRYMPLE

Extend Cement to Northwest; Open Field in Hughes County

The Cement field in Caddo County was extended northwestward, a new pay zone was found in the Langston pool of Logan County, and prospective pool openers were being tested in Lincoln and Hughes counties to provide highlights for an otherwise routine week in Oklahoma.

Ray Stephens, Inc.'s No. 1 well in NW NW SE Section 21-6-10w, extended the Cement field in Caddo County nearly 1 mile to the northwest. It had sand at 3,303-15 ft., total depth, pipe was set at 3,300 ft., and after showing for an estimated 60 to 75-bbl. well, it was shut in for pipe-line connections. Production was thought to be from Hoxbar sand. This is the second new pay zone opened by the company in the northwest trend of the field this year, the first having been at around 2,100-2,200 ft. The Cement field is one of the busier areas in Oklahoma, with several wells drilling on the townsite as well as in various sectors of the far-flung area.

Sinclair Prairie Oil Co.'s No. 1 Ford, SW NW SE Section 12-17-1w, has found a deeper pay zone in the Langston pool, Logan County. Originally a producer in Marshall zone at 5,082 ft., it was deepened to 5,148 ft. in sand and flowed 275 bbl. of oil in 12 hours. First pay in the new zone was found at 5,125 ft. in dolomite, where it was swabbed at the rate of 60 bbl. of oil in 24 hours.

Stanley Rogers and associates opened a Booch-sand producing area in Hughes County at No. 1 Scott, SE SW NW Section 23-6-8, southeast of the Sasakwa area. Booch sand was drilled at 2,646-76 ft., total depth, pipe was set on top of sand and when plug was drilled an estimated 150 bbl. of oil net was bailed in 24 hours. The well was shot four times and it was estimated the wildcat would produce from 250 to 400 bbl. of oil daily when cleaned out. There is no water showing.

Among the Wildcats

J. E. Crosbie, Inc., and others' No. 1 Robbins, SW SW NW Section 6-22-2w, wildcat in Noble County, found first Wilcox sand at 5,177-5,217 ft., second sand at 5,254-62 ft., total depth, and it was dry and abandoned. The wildcat was northwest of the Polo pool, southwest of Billings pool and east of the Garber pool.

Superior Oil Co.'s No. 1 School Land, NE NE SW Section 36-7-16w, Kiowa County outpost, had a hole full of water in sand at 1,940-58 ft., total depth, and was abandoned.

Oklahoma Oil Corp.'s No. 1 Kaney, NW SE NW Section 32-13-10, Okfuskee County wildcat, had a hole full of water and was abandoned in Wilcox sand at 3,635-55 ft., total depth.

Brady's No. 1 Sala, NW NE NW Section 33-13-6, wildcat location in Lincoln County, was abandoned. Conley's No. 1 Duperou, NW NW NE Section 18-6-5, Pottawatomie County wildcat, had spudded and set 10-in. pipe at 70 ft., but was reported abandoned.

Oil Investment Co.'s No. 1-B Hamil, NE NW NW Section 6-5s-15w, an old wildcat southwest of Grandfield in Tillman County, was dry and abandoned after deepening from 2,829 ft. to 3,353 ft.

W. C. McBride, Inc.'s No. 1-A State, SW NE NE Section 13-29-2w, Kay County wildcat, had Simpson formation at 3,853 ft., slightly stained, and was dry and abandoned at 3,872 ft.

Dean Brothers' No. 1 Emery, NE NE NE Section 30-3s-13w, Cotton County wildcat, had dry sand at 1,420-32 ft., and was abandoned at 2,503 ft.

New wildcat tests included Kerlyn Oil Co.'s No. 1 Ogee, NE NW NE Section 17-7-5, about ¾ mile east of St. Louis production in Pottawatomie County, and 3 miles southwest of Maud, building rig; Potter and others' No. 1 Kahle, SW SE SW Section 3-14-16, north of Boynton pool, Muskogee County, spudded and shut down; Carter Oil Co.'s No. 1 Osage, NW NE NW Section 9-24-6, about 1¾ miles east of Fairfax, Osage County, rig.

Pottawatomie County

Marshall's No. 1 Manning, SE SE NE Section 24-6-4, Gray pool, Pottawatomie County, topped Earlsboro sand at 2,895 ft., set 5-in. pipe at 2,903 ft., and was bottomed at 2,939 ft. It flowed 265 bbl. of oil in 24 hours.

Magnolia Petroleum Co.'s No. 4 Fyke G, SW NW NE Section 29-7-5, St. Louis field, found dolomite at 4,115 ft., total depth 4,166 ft., was acidized and pumped 125 bbl. of oil and 40 bbl. of water in 24 hours.

Portable Drilling Co.'s No. 4 Boyd, NE NE SE Section 29-7-5, was acidized and swabbed 800 bbl. of oil the first 24 hours and 400 bbl. the next 24 hours. Dolomite was topped at 4,118 ft., 7-in. casing set at 4,080 ft., and the hole was bottomed at 4,166 ft.

Alma Oil Co.'s No. 1 Hughes, NE NE NE Section 33-7-5, had a hole full of water and was abandoned in Wilcox sand at 4,392-95 ft., total depth.

J. E. Smith's No. 1 Sugmund, SE NE NW Section 5-10-4, Shawnee area, entered Earlsboro zone at 4,380 ft., had sand at 4,440-83 ft., total depth, was shot and flowed 80 bbl. of oil in 24 hours.

Farmers Mutual's No. 2 School Land, SW SW NE Section 16-5-5, an old well, was deepened from 2,450 ft. to 2,631 ft., acidized, obtained only a slight showing of oil and was abandoned.

New work in Pottawatomie County: Atlantic Refining Co.'s No. 2 Spaugy, SE SW NW Section 6-6-4, location; Marko's No. 1 Vineyard, C SW NW Section 14-7-3, cellar and pits; Gulf Oil Corp.'s No. 4 Johnson, NE SE NW Section 29-7-5, cellar and pits; Smith's No. 3 McDaniels, SW SE NE Section 31-7-5, location; Iglehart's No. 1-A Haer, NW NW SE Section 31-10-5, twin well, cellar and pits.

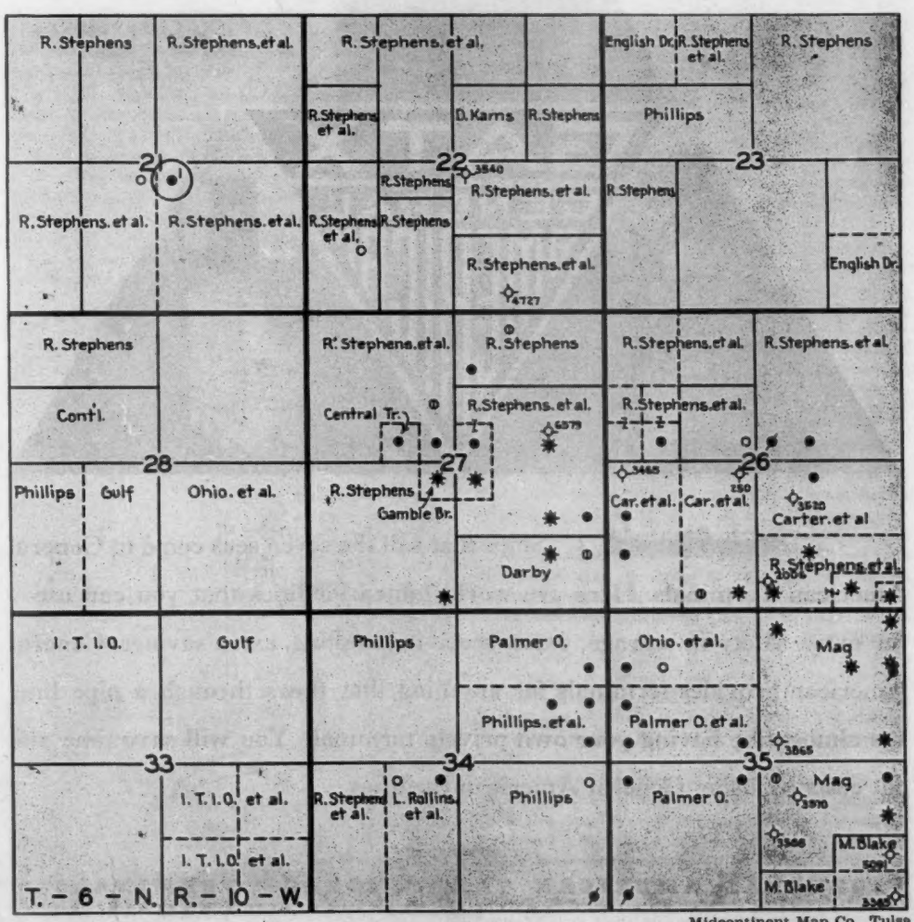
Seminole County

Mid-Continent Petroleum Corp.'s No. 3 Tiger, NW SW SE Section 12-6-5, Grayson area, Seminole County, topped dolomite at 3,691 ft., had Wilcox sand at 3,785-89 ft., total depth, and pumped 180 bbl. of oil daily.

Sunray Oil Co.'s No. 2 Collins, NE SE SW Section 12-6-5, found sand at 3,820 ft., total depth 3,821 ft., and set 8-in. pipe at 3,773 ft. It was acidized and shot and pumped 305 bbl. of oil in 24 hours.

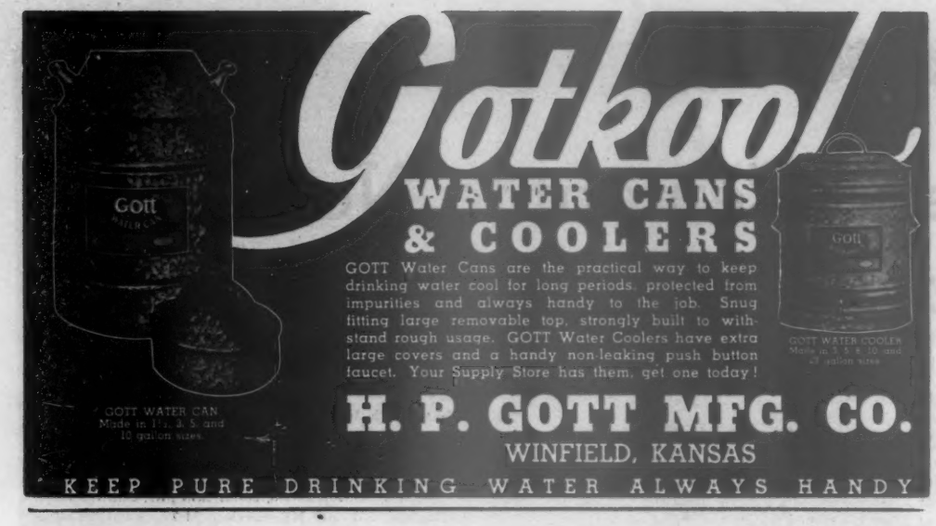
Ligon's No. 2 Logan, NW NW NE Section 25-8-7, Rosanna area, had Wapanucka formation at 3,284 ft., set 7-in. casing at 3,288 ft. and was bottomed at 3,300 ft. It flowed 72 bbl. of oil in 24 hours.

T. E. Iglehart's No. 1 Kennedy, NW NW NW Section 3-6-5, Seminole County sector of the St. Louis



Midcontinent Map Co., Tulsa

Extension of the Cement field, Caddo County, 1 mile northwestward was indicated at Ray Stephens, Inc. and others' well in NW NW SE Section 21-6-10w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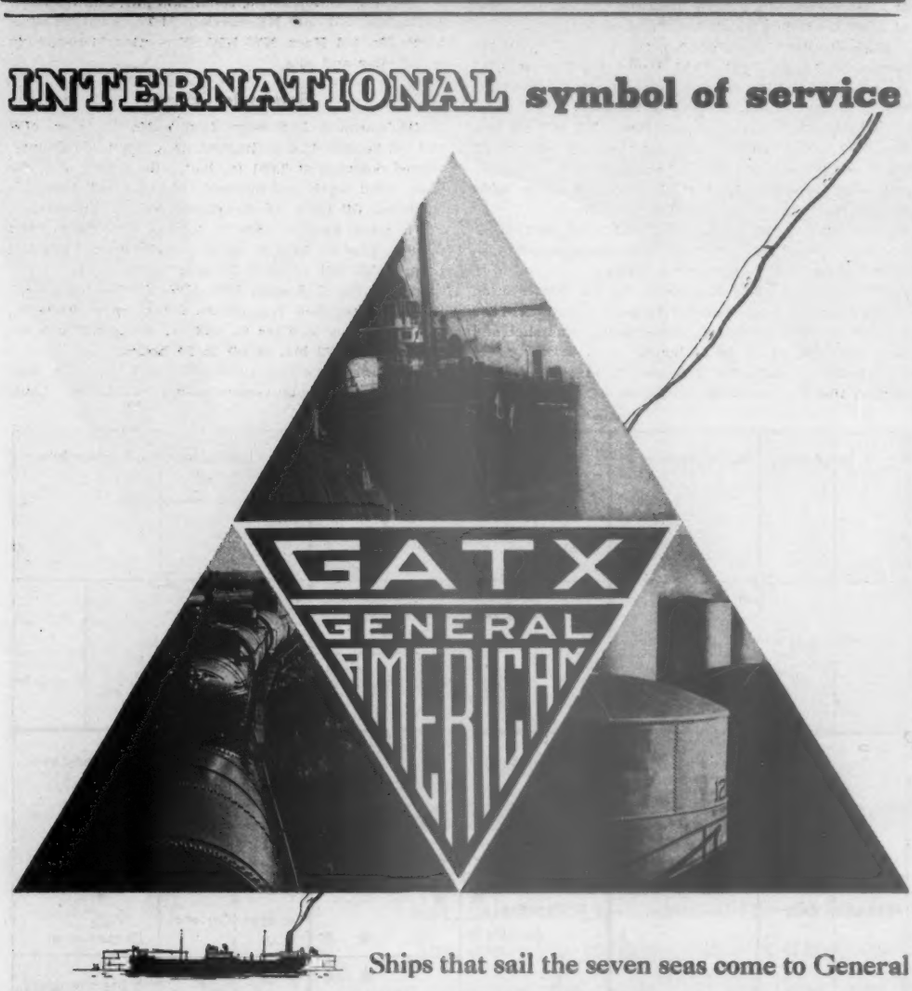

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field, had dolomite at 4,037 ft., and was bottomed at 4,064 ft. Seven-inch casing was set at 4,026 ft. After treating with 5,000 gal. of acid, it swabbed 963 bbl. of oil and 1,000 bbl. of water in 24 hours.

McQueen's No. 1 Scroggins, NW NW SW Section 34-7-6, was an abandoned location.

Deep Rock Oil Corp.'s No. 4 Douglass, SW NW SE Section 30-8-8, had dug cellar and pits; Shepherd's No. 1-A Scroggins, NW NW SW Section 34-7-6, was rigging up rotary; Kemnitz's No. 1 Caesar, NE NW NW Section 29-6-6, was drilling below 670 ft.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending September 30, and for the preceding week was as follows:

	Barrels	
	Sept. 30	Sept. 23
Allen	5,625	5,550
Billings	5,775	5,750
Burbank	7,225	7,200
South Burbank	8,175	8,125
Balance Osage	17,250	17,350
Blackwell district	3,475	3,375
Bristow-Slick	6,575	6,575
Chandler	1,375	1,350
Crescent	2,675	2,650
Cromwell	2,950	2,975
Cushing-Shamrock	9,550	9,350
Duncan	3,775	3,675
Edmond	4,050	4,075
Fish	3,650	3,675
Fitts	20,550	19,500
Jesse	1,875	1,850
Graham-Fox	3,225	3,200
Gray	625	650
Healdton	8,950	8,900
Hewitt	3,675	3,625
Keokuk	2,875	2,850
Konawa	1,075	1,075
Lucien	8,300	8,225
Moore	2,575	2,550
Oklahoma City	75,725	88,050
Olympic	1,675	1,675
Ramsey	4,250	4,230
Sasakwa	1,050	1,025
Sholem-Alechem	2,550	2,550
Seminole district:		
Bowlegs	7,275	7,225
Carr City	2,425	2,325
Dora	2,700	2,650
Earlsboro	4,125	4,075
South Earlsboro	450	450
East Earlsboro	3,275	3,250
Little River	5,875	5,875
East Little River	550	550
Maud	525	500
Mission	1,175	1,150
Seminole	6,475	6,425
East Seminole	1,150	1,175
Searight	1,650	1,675
Total Seminole	37,650	37,325
St. Louis-Pearson	26,700	26,750
Tatums	1,050	1,075
Tonkawa-Garber-Thomas	3,875	3,875
Wewoka	1,650	1,675
Yale-Jennings	3,475	3,450
Other pools	92,025	91,700
Total Oklahoma	387,525	397,500

Pontotoc County

Sinclair Prairie Oil Co.'s No. 13 Rolls, C NE SW Section 28-5-8, Allen area, Seminole County, was shot in sand at 829-55 ft., total depth, and pumped 4 bbl. of oil in 24 hours.

Phillips Petroleum Co.'s No. 2 Norris, SE NE SW Section 25-2n-6, an old well in the Fitts district, was deepened from 4,299 ft. to 4,439 ft., shot and pumped 37 bbl. of oil daily. Burke-Greis Oil Co.'s No. 5 Chambers, NW NW NW Section 36-2n-6, an old well, was deepened from 4,401 ft. to sand at 4,355 ft., total depth 4,475 ft., and pumped 15 bbl. of oil and 1 bbl. of water in 24 hours.

Adair's No. 1 Brown, SE SE NE Section 17-4-8, was a machine. Minton's No. 2 Harris, SE NE NW Section 35-5-7, set 10-in. casing at 103 ft. and was waiting on cement.

Hughes County

J. E. Smith's No. 2 Scroggins B, NW SW NE Section 20-7-8, Fish area, Hughes County, set 7-in. casing in top of Booch sand at 2,924 ft., total depth 2,955 ft., was shot at 2,934-50 ft., and pumped 63 bbl. of oil in 24 hours.

Melton's No. 1 Jackson, C S½ NW NE Section 5-8-10, was a machine.

Okfuskee County

Doak's No. 1 Community, NE SW NE Section 16-10-11, Weleetka area, Okfuskee County, found Cromwell sand at 2,836-41 ft., total depth, and set 8-in. pipe at 2,791 ft. It flowed 65 bbl. of 37-gravity oil and 5 bbl. of water in 24 hours, with 1,500,000 cu. ft. of gas.

C. M. Seran's No. 1-A Seran, SE SE NW Section 2-11-8, Dill pool, flowed 296 bbl. of oil the first 24 hours, then flowed 105 bbl. in 24 hours, pinched, with gas estimated at 3,000,000 cu. ft. It found sand at 3,355-3,412 ft., total depth 3,433 ft.

(Continued on Page 76)

Texas and Louisiana Gulf

By NEIL WILLIAMS

Distillate Production Below 10,000 ft. in Brazoria Area

HOUSTON, Tex., Oct. 2.—Opening of distillate production from a 10,000-ft. sand at the Anchor prospect in Brazoria County, testing of the Tertiary Wilcox sand in the Bancroft field, Beauregard Parish, coastal Louisiana, and the favorable showing of several wildcats in the latter state marked up an interesting week of development along the Gulf Coast.

Glenn H. McCarthy's No. 1 J. C. Carr, southeast of the town of Anchor, Brazoria County, is flowing an estimated 75 bbl. of fluid per day, 95 per cent of which is water-white distillate and the balance wash water. The well is flowing through two bottom-hole chokes and a ½-in. choke on tubing, under a tubing pressure of 3,450 lb. The hole is bottomed at 10,538 ft. and the well is producing from the basal Frio formation through perforated casing at 10,460-67 ft.

This well has been looked upon as a pool opener for the past 10 days, as an electrical survey had logged several promising gas and distillate sands between 9,200 and 10,000 ft. Other sands above the present producing depth were indicated at 10,353-58 ft., 10,358-65 ft., 10,372-76 ft., and 10,378-84 ft. The numerous sands and the similar characteristics of the distillate indicates that the well is located on the same type of structure as that of the Old Ocean field, situated about 20 miles west, which produces different types of high-gravity crude at various horizons between 8,800 and 10,500 ft. Prior to the completion of the above well, Old Ocean was the only field along the Texas Gulf Coast district that produced oil at a depth below 10,000 ft.

Anchor has been looked upon as a favorable prospect since 1933, when geophysical work by various major and independent companies showed favorable indications. Several wells were drilled in the immediate area, but it was not until the first of 1939 that exploration was carried below 10,000 ft. This was done by Humble Oil & Refining Co., which drilled two 10,000-ft. holes northwest and northeast of the present producer.

The completion of No. 1 Carr as a commercial producer makes the second field to be opened in the county by the same operator. The other strike was at Chocolate Bayou, several miles to the east, where No. 1 Houston Farm Development Co. was completed as a distillate producer. Details of the completion of this well have not yet been released by the operator, but it is reported to be producing from a depth between 9,800 and 9,900 ft. A second operation has been started north of this discovery, and the rig at Anchor is being moved about 1,300 ft. northwest for No. 1 Salmon & Mumma, in the George Robinson Survey.

H. C. Cockburn and others' No. 1 Dezerzanowski, the discovery well of a field, west of the town of Rosenberg, Fort Bend County, is still testing, and on a recent 24-hour gage, flowed 112 bbl. of fluid through a 7/32-in. choke. Ninety-five per cent of the fluid was distillate and 5 per cent was salt water. The water may be coming from up the hole, due to a faulty cement job. The well was completed the previous week in the Yegua horizon at 7,726-43 ft. No new locations were reported during the week.

In the east extension of the Turtle Bay field, Chambers County, Edwards Drilling Co.'s No. 1 Sloan, was completed. It is a small producer, but may be reworked, due to a high gas-oil ratio. The hole is bottomed at 6,585 ft., and the well was completed through perforated casing at 6,553-55 ft. for an initial production of 31 bbl. in 45 hours, flowing through a 9/64-in. choke. Tubing pressure was 750 lb. and casing pressure 2,100 lb.

In Harris County, the Clear Lake field was extended about ½ mile south with the completion of Stanolind Oil & Gas Co.'s No. 1 Coulter. Bottom of the hole is 5,848 ft. and the well was completed through perforated casing at 5,845-46 ft., flowing 74 bbl. per day through ¼-in. choke. Humble Oil & Refining Co.'s No. 15-C West, perforated casing at 5,691-96 ft., and flowed 920,000 cu. ft. of gas daily through a ⅛-in. choke.

On the north side of the League City field, Galveston County, Phillips Petroleum Co. is testing a deep sand in No. 1 Duggan. The well is testing through perforated casing at 9,926-39 ft. Previous testing at 9,940-43 ft. and 9,926-30 ft., showed pipe-line oil and some salt water.

Operators interested in the Tertiary Wilcox trend centered their attention on the Bancroft field, Beauregard Parish, coastal Louisiana, where Republic Production Co. is preparing to test No. 9 Lutcher Moore Lumber Co., bottomed in the Wilcox formation at 11,018 ft. A short string of 5½-in. casing was cemented on bottom and a production test is expected to be made in the top section of the Wilcox sand at 10,292 ft. The well is a "closed" operation and details of the core record were not available. The outcome of this well is being watched with much interest in view of the fact that development along this trend has been disappointing, as several dry holes have been drilled within recent weeks on several promising prospects, and interest in the area has begun to wane. Bancroft is in the heart of the trend and all production is from the upper Cockfield sand at approximately 7,300 ft.

In the same parish and southeast of the town of Singer, location for a deep well was made by California Co. for No. 2 Long-Bell Lumber Co. in Section 12-5s-10w. The location is about 5 miles northwest of the company's No. 1 Long-Bell Lumber Co., recently abandoned at a total depth of 10,692 ft. This well logged favorable showings to warrant setting casing and several tests were made before it was abandoned.

Another dry hole was marked up for the trend as Carter & Rubsamen's No. 1 E. Boyette, northern Avoyelles Parish, was bottomed in the Wilcox at a total depth of 5,550 ft. The formation was topped at 5,205 ft. In Vernon Parish, Pan American Production Co.'s No. 1 Anderson-Post Lumber Co. topped the Wilcox at an estimated depth of 4,550 ft., and the well is coring ahead in sandy shale below 4,657 ft.

Three wildcats in Plaquemines, Jefferson and St. John the Baptist parishes loomed as probable pool openers as encouraging showings were reported. In the extreme southeastern part of Plaquemines Parish, Gulf Oil Corp.'s No. 8 State PP., topped a sand section at 9,789 ft., and at a total depth of 9,790 ft., the well attempted to blow out. It was brought under control and an electrical survey is being made. Sand with an odor of oil was logged at 9,506-15 ft., and while drilling, gas began to show in the slush pit, and increased until the hole had reached a depth of 9,790 ft.

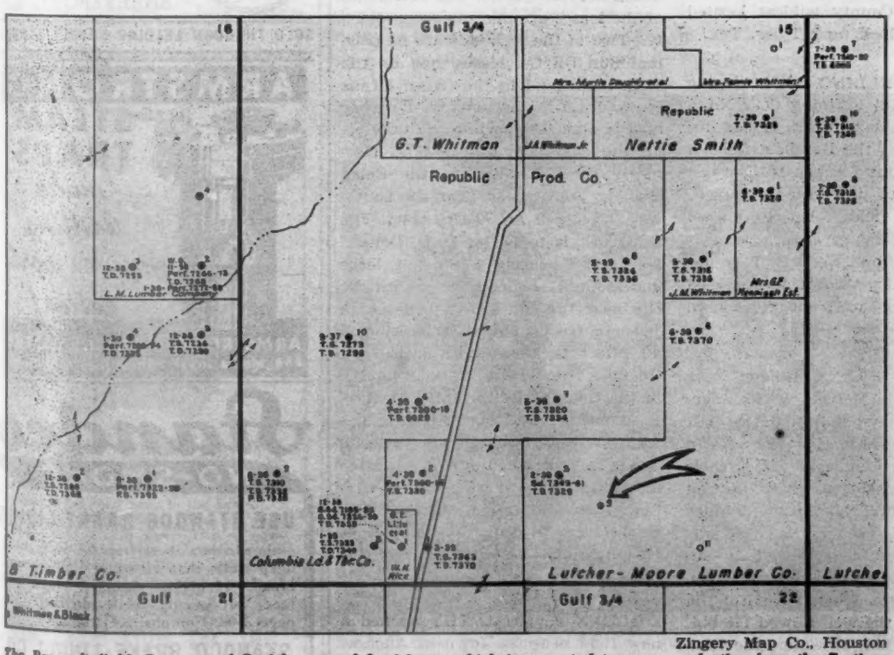
In Jefferson Parish, Barataria Bay area, north of the Lafitte field, California Co.'s No. 1 Adam Rutley is drilling in shale below 10,190 ft. An electrical survey indicated sand, showing oil, at 8,205-16 ft., and side-wall samples at 8,207-11 and 8,213 ft. showed sand with an oil odor. A string of 9⅝-in. casing was recently cemented at 8,482 ft.

Pan American Production Co.'s No. 1 Mills, Section 12-11s-7e, St. John the Baptist Parish, is drilling in sandy shale below 8,300 ft. Side-wall cores at 8,124 ft. carried a slight odor and a faint oil taste, while the core at 8,130 ft. had an odor of oil. The well is located east of Shell Oil Co., Inc.'s No. 1 Godchaux Sugar Co., recently abandoned at a depth below 11,000 ft.

Southeast of the town of Broussard, Lafayette Parish, location for a deep test was made by Stanolind Oil & Gas Co. The well is located on the Lacaze Billeaud and others' lease in Section 35-10s-5e. The location is several miles northwest of the St. Martinsville field.

On the southeast flank of the old Section 28 salt dome William Helis staked location for No. 1 Rycade Oil Co. in Section 33-9s-7e. The well is in the same section as Helis' No. 1 Levert plantation, which is bot-

(Continued on Page 88)



Zingery Map Co., Houston

The Bancroft field, Beauregard Parish, coastal Louisiana, which is expected to open production from the Tertiary Wilcox sand below 10,000 ft.

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Among the Drilling

NOBLE DRILLING CO., Tulsa, is completing the second deep-pay producer in the northwestern edge of the North Cowden pool in Ector County, West Texas. The well is Stanolind Oil & Gas Co.'s No. 1-A Blakeney, located in Section 28, Block 43, T.&P. Survey, about 3 miles southeast of the discovery deep-pay producer on the extreme northwest end of the North Cowden pool. The well was last reported cleaning out rotary mud after encountering slightly porous and oil-stained sand from 5,120-40 ft. It is bottomed at a total depth of 5,160 ft. and is reported to be higher structurally than Gulf Oil Corp.'s No. 1 Holt, the discovery well. The No. 1-A Blakeney topped the pay section some 28 ft. higher than the No. 1 Holt. No production gages have been made at the new well, but operators are of the opinion that commercial production is possible.

MITCHAM BROTHERS, West Central Texas drilling contractors, are scheduled to resume drilling at the test started by L. L. Evans, of Brownwood, on W. P. Hill lands, 1½ miles east of Grosvenor, Brown County. It has been taken over at a depth of 506 ft. by Wirt Davis and McDonald & Campbell, of Dallas, and drilling is to be resumed at once.

RICE DRILLING CO. of Shreveport, La., is drilling below 6,300 ft. on Texas Co.'s No. 1 Scritchfield, a deep Smith County wildcat located on a large block near Tyler, Tex.

DELTA DRILLING CO. is rigging up on Lion Oil Refining Co.'s No. 1 Warnock, an east offset to the discovery well of the Dorcheat field of Columbia County, Arkansas. The test is the first to drill since discovery of the new field, formerly known as the Experiment area. Delta is preparing to spud No. 1 C. T. Grace, a Union County wildcat, located east of El Dorado, Ark., and considered an important deep test.

GREEN & OWENS, Abilene, Tex., together with Metcalf & Hallinan, New York, have indicated the first commercial production for Nolan County, West Central Texas, at their No. 1 Tipton, wildcat test in Section 43, Block 19-B, T.&P. Survey, 3 miles southwest of Trent. The well was last reported to have flowed an estimated 450 to 500 bbl. on a 24-hour gage. During a 6-hour period of the 24-hour gage the well flowed 116 bbl. of oil and 2 bbl. of water, the flow being through 900 ft. of open hole and about 3,000 ft. of water. Production is from the Strawn sand drilled from 5,135-38 ft. Operators are faced with the problem of completing the well through 4-in. casing, the 5½-in. having been cemented at 4,326 ft. or just above an oil showing found several months ago.

PENROD DRILLING CO. of Dallas, Tex., is setting intermediate casing at Tide Water Associated Oil Co. and Seaboard Oil Co.'s No. 1 Clark, an edge test in the Atlanta field of Columbia County, Arkansas. Penrod this week completed a new extension to the "D" sand in the Cotton Valley field, Hunt Oil Co.'s No. 2 Stewart, which gaged 888 bbl. daily, bottomed at 8,590 ft.

HARRY BASS DRILLING CO., Dallas, Tex., will drill three new tests in the Grapeland pool of northern Houston County, eastern Texas. This is the second spurt of development for the pool in the past month, there being two tests drilling at the present time. The wells are to be drilled by the Bass Drilling Co. for the account of Lone Star Gasoline Co. and Trinity Gas Co., both of Dallas, and will be on a 1,450-acre unitized block turned recently to those companies for development which is scheduled to lead to the construction of a recycling plant. The acreage was farmed out by Sun Oil Co., Sinclair Prairie Oil Co. and Cities Service Oil Co. and almost all of the leases are due to expire shortly. Two of the locations are on original Sun Oil Co. leases, one on the J. E. Bean land in the Green Evans Survey and in the northwest corner of a 50-acre tract, while the other is on the James A. Patton land (formerly C. W. Smith) in the Caleb Wallace Survey and near the southwest corner of an 80-acre tract. The third test is to be on D. O. Denson fee land, formerly a Sinclair lease and in the C. Bruce Survey with the site near the southwest corner of a 160-acre tract. The first location is an offset to the American Liberty Oil Co.'s No. 1 Bean, a gas producer in the field, while the third location is about ¼ mile north of the gas well. With crews already erecting derricks, Bass Drilling Co. plans to move in a rig each from the Opelika, Long Lake and Cayuga fields. Harry Bass (Bass Drilling Co.) and J. C. Patton, Dallas, own the Trinity Gas Co.

GLENN H. McCARTHY opened a new field near the town of Anchor, Brazoria County, Texas, with the completion of his No. 1 J. C. Carr, which

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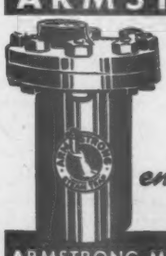

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Contractors

is flowing an estimated 75 bbl. of distillate daily through various chokes. Production is from the Frio sand through perforated casing at 10,460-67 ft. The rotary is being moved about 1,300 ft. northwest of the discovery for his No. 1 Salmon and Mumma in the George Robinson Survey. In the Chocolate Bayou field No. 2 Houston Farm Development Co. is being rigged up.

HARRY L. EDWARDS Drilling Co. received contract from Stanolind Oil & Gas Co. for a deep wildcat to be drilled near the town of Broussard in Lafayette Parish, Louisiana. The well will be drilled on the Lacaze Billeaud lease in Section 35-10s-5e. In the Turtle Bay field, and east of the field proper, the company's No. 1 Sloan has been completed as a producer to extend production a short distance to the south. In the Lovells Lake field, Jefferson County, Texas. Stanolind Oil & Gas Co.'s No. 1 Steinhagen has cored the pay and casing was cemented for a production test. One rotary is operating in the Hardin field, Liberty County, Texas, for Woodley Petroleum Co., while another operation is reported in the Dickinson field, Galveston County, Texas, for Midstates Oil Co.

RUTHERFORD DRILLING CO. is testing No. 1 Garcia, an outpost well in the Ben Bolt field, Jim Wells County, Texas, while another operation is reported at the West Columbia field for Frost & Dunman. Near the town of Woodsboro, Refugio County, Texas, drilling was started on No. 1 E. E. Swift, north of La Rosa field. The well is being drilled jointly with the Royalty Oil & Gas Co.

HELMERICH & PAYNE, INC., Tulsa, and Blackwell Oil & Gas Co. have staked No. 1 Berry, NE NE Section 14-17-1e, Payne County, Oklahoma, on a lease which is designated as the Berry & Mullendore Trust Co. farmout. This property is southeast of the Coyle pool. Helmerich & Payne, Inc., has drilled three wells on the south edge of the field on the Collins lease.

FAIN DRILLING CO., Oklahoma City, Okla., is preparing to run 4,800 ft. of 7-in. o.d. liner at Continental Oil Co.'s No. 1 Proctor, NW¼ Section 28-10-20w, Washita County, Oklahoma. After sidetracking the hole was drilled last week to a total depth of 14,515 ft.

PORTABLE DRILLING CO. at No. 1 Nickell, SE SE SE Section 17-14-5e, Lincoln County, Oklahoma, drilled plug in 7-in. casing set at 3,509 ft. after drilling to total depth of 3,552 ft.; operators hit top of Prue sand at 3,475 ft., and top of saturated sand at 3,525 ft.

H. & M. DRILLING CO. at No. 3 LeGree, SW SW NW Section 31-19-1w, McPherson County, Kansas, was running 7-in. casing to total depth of 2,945 ft., after topping chat at 2,920 ft.

Daylight crew on Continental Oil Co.'s deep well, No. 1 Proctor, Washita County, Oklahoma: R. L. Slagle, driller; V. V. Thomasson, C. W. Farris, Virgil Stafford, B. O. Cook, S. M. Charlson

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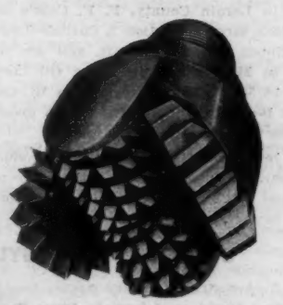

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Eastern Field Report

By STAFF CORRESPONDENT

Oriskany Gas Test in Butler County Nearing Pay Depth

PITTSBURGH, Pa., Oct. 2.—In Butler County, Pennsylvania, South Penn Oil Co. topped Onondaga lime at 5,347 ft. on the M. A. Fowler heirs farm in Concord Township, and shut down at 5,400 ft. to run 7-in. casing. Tully lime was topped at 5,084 ft., showing a thin section to the Onondaga, and with the surface elevation of 1,231.68 ft. the Onondaga is 4,115.32 ft., subsea. This test is on the Hilliards quadrange, Lat. 41.01° and Long. 79.48°, and about 12 miles north, 17° east of the city of Butler. It is the first Oriskany test in the vicinity.

SOUTHEAST OHIO

The best producer for the week was in Coshocton County, Southeast Ohio, where the Leonard Oil & Gas Co. completed No. 3 Ashcraft, NW¼ Section 14, Pike Township. It was drilled to 3,198 ft., Clinton sand, and 95 bbl. was swabbed in 24 hours.

In Athens County, Gross & McCune completed a 25-bbl. well on the Grant Antle farm in Section 30, Rome Township. It was bottomed in the first Cow Run sand at 384 ft. In Section 7, Canaan Township, Elma Butts completed a 200,000-cu. ft. gasser on his fee, in first Berea sand at 1,456 ft.

In Cuyahoga County Benedum & Trees completed a 750,000-cu. ft. gas well, also good for 10 bbl. per day, on the Society for Savings lease, Lot 25, Mayfield Heights Village, in Newburg sand at 2,836 ft.

In Jefferson County N. Ellis and others drilled No. 8 Letfor, SE¼ Section 29, Saline Township, through Berea sand to 1,300 ft., and it was dry.

In Knox County, Section 11, Jackson Township, H. W. Scott and others' test on the J. L. and Emma Bucy farm was dry through the Clinton sand to 3,110 ft.

In Licking County, Section 25, Jackson Township, Murphy & Emerald Petroleum Co. completed a second test on the Sarah Swisher farm in the Clinton sand at 2,586 ft. and it is good for 750,000 cu. ft. a day.

In Lorain County, P. F. Cain's test on the Agnes Clark farm in Section 2, Carlisle Township, was dry in Clinton sand to 2,350 ft. and was abandoned.

In Medina County Dymo Oil Corp. completed No. A-18 W. H. Ripley, in Section 13, Chatham Township, in Berea grit at 579 ft. It was good for 5 bbl. a day after a shot.

In Perry County Corning Producing Co.'s No. 3 Ketchum in Section 22, Monroe Township, had Clinton sand at 3,755 ft. and is a gas well gaging 800,000 cu. ft. a day.

SOUTHWEST PENNSYLVANIA

In Armstrong County Apollo Gas Co.'s well on the Edgar Harkleroad farm in Plum Creek Township was drilled to 3,750 ft., through the Bradford sand topped at 3,634 ft., and it was dry, thus limiting the gas pool recently developed.

In Manor Township John Wray & Co. completed the test on the Mrs. Dora E. Myers farm at 3,410 ft. with 85,000 cu. ft. a day from the Speechley and Bradford sands. In Boggs Township these operators are drilling at 900 ft. on the William Matter farm and have rig up on the Walter Upperman farm.

In Cowanshannock Township, Armstrong County, Equitable Gas Co. is drilling at 1,268 ft. in the D. W. Raraigh test; L. F. Watson and others, drilling at 3,212 ft. on the Belle Boyer farm; Peoples Natural Gas Co., rig up on the France Harkleroad farm and rigging up the William Small test; Apollo Gas Co. is clearing location for Hulda M. Bleakley test.

In Gilpin Township, Armstrong County, Pleasant Valley Gas Co. is drilling at 3,465 ft. in J. J. Klingensmith test. In Kiskiminitas Township, Apollo Gas Co., at 822 ft. on the Wilson heirs farm; Peoples Natural Gas Co., at 4,114 ft. in J. M. Dunmire test. In Kittanning Township H. C. Jackson will deepen No. 1 W. J. Gray. In Plum Creek Township William McCollins has rig up for the Add Reefer test.

Clarion-Indiana

In Indiana County T. W. Phillips Gas & Oil Co. completed the test on the Indiana Savings & Trust Co. lease at 3,414 ft. with about 48,000 cu. ft. of gas a day from Bradford sand. This company is drilling at 2,760 ft. in the Joseph Mack test. Both are in White Township.

In West Mahoning Township, Indiana County, R. C. Galbreath and others are drilling on the Thomas Steffey farm below 1,350 ft.

In Clarion County Burnham Gas Co. is drilling at 1,180 ft. in the Charlotte Slater test in Clarion Township. In Porter Township Owens-Illinois Glass Co. is drilling at 550 ft. on the Walter Bowersox farm. In Limestone Township Squirrel Hill Gas Co. had reached 1,990 ft. in the N. A. Sloan second test.

In Westmoreland County Dome Gas Co. is down 2,000 ft. deepening No. 1 L. L. Weister in Bell Township. In Allegheny Township Peoples Natural Gas Co. had reached 3,195 ft., deepening the R. H. Miller well. In Washington Township this company is drilling at 2,299 ft. on the Asa Blose farm.

Fayette-Greene

In Greene County A. L. Phillips and others drilled a dry hole on the E. Sheppard farm in Richhill Township through the Fifth sand to 3,182 ft.

In Center Township, Greene County, Equitable Gas Co. is drilling at 3,130 ft., deepening No. 1 Eli Orndoff, with the Gantz sand at 2,996-3,013 ft. and 134,000 cu. ft. of gas at 3,007-09 ft. Morgan Henderson, agent, was at the top of the Ninevah Thirty-foot sand in No. 4 J. L. Metz and will cement a cave before drilling in.

In Perry Township, Northeastern Oil & Gas Co. shut down at 3,130 ft. to run 5-in. casing in No. 3 N. S. Fetty. In Greene Township Fred Garrison was shut down at 650 ft. at the Henderson Coal Co. test. Brummage and others are drilling at 2,197 ft. in the H. Durr test.

In Fayette County Greensboro Gas Co. is building a rig on the Mary Oravis farm in Nicholson Township. Here, Duquesne Gas Co. is drilling at 1,500 ft. in No. 2 Andrew Demaske, with the Big Injun sand topped at 1,283 ft. and 130,000 cu. ft. of gas at 1,302 ft.

In Menallen Township, Fayette County, J. H. Carnell is drilling at 480 ft. on the Mike Uhrin farm. The Wahler Powers Oil & Gas Co. is deepening the S. H. Powers' test from 1,353 ft.

Washington County

In South Franklin Township, Washington County, Union Gasoline & Oil Corp. completed No. 822 C. T. Conn at 1,001 ft. with the Little Dunkard said at 735-818 ft. and oil in the Big Dunkard at 983-88 ft. which is rated good for 6 bbl. a day. In this township, Harry Williams & Co. are starting No. 4 Jason Buchanan; Foley & Williams are drilling at 1,191 ft. on the Weller Iams farm. In Amwell Township Shivers and others are down 250 ft. in the T. J. Horn test. In Bethlehem Township W. L. Potts is down 1,875 ft. in the Ken Kinnemond test. In West Bethlehem Township Wherry and others had reached 915 ft. on the Weir heirs land.

In Morris Township Union Gasoline & Oil Corp. is fishing 8¼-in. casing at 1,435 ft. in No. 821 J. R. Andrews.

In Allegheny County Homer Nixon and others made a location in South Fayette Township on the Joseph Hickman farm. Here, Cox & Gibson have a rig standing for a test on the William M. Patterson farm.

In West Deer Township, Allegheny County, D. A. McKnight is down 1,600 ft. in the John H. Flick test and Larkin & Co. are drilling at 1,810 ft. in the J. G. Jeuther test.

WEST VIRGINIA

Three small oil wells were completed in West Virginia. In Calhoun County B. B. Shimer has a 7-bbl. completion on the Dosha Freed farm in Sheridan district at 1,759 ft. in Salt sand. In Washington district, Calhoun County, Creed Yoak and others completed a 5-bbl. well on the W. H. Vincent land at 1,656 ft. in Maxton sand. In Ritchie County R. H. R. Oil Co. completed No. 4 Ira L. Jackson in Grant district in Maxton sand at 1,852 ft. and is good for 5 bbl. a day.

Gas Wells

In Braxton County Pittsburgh & West Virginia Gas Co. completed No. 7695 Fanny L. Hall, in Birch district, at 1,990 ft. with Maxton sand at 1,980 ft. and 700,000 cu. ft. of gas at 1,982-86 ft.

In Cabell County Merritts Creek Gas Co. completed a gas well on the Ada Braley farm in Guyandotte district at 2,929 ft; Brown shale at 2,600-2,924 ft. yielded 116,000 cu. ft. of gas a day after the shot. In Grant district J. H. Wilson and others completed No. 1 William H. Birch at 3,908 ft. It is a very light gas well.

In Guyandotte district, Cabell County, the Fourpole Gas Co. completed the V. M. Toppings test at 3,308 ft. It is a small gasser and will be abandoned.

In Calhoun County McCall Drilling Co. completed the second test on the Gainer and Wigner farm in Sherman district at 2,135 ft. with gas at 2,072-2,112 ft. which gaged 800,000 cu. ft. a day 24 hours after a 100-qt. shot.

In Gilmer County, Gilmer County Gas Co. completed the test on the Cordelia J. Collins farm in Center district at 1,845 ft. It produced 240,000 cu. ft. a day after a 120-qt. shot at 1,794-1,811 ft.

In Lincoln County Federal Gas Corp. deepened No. 5 Louisa J. Tudor in Jefferson district from 2,348 to 3,725 ft. Brown shale was at 3,357-3,706 ft. with 284,000 cu. ft. of gas a day at 3,605 and 3,700 ft. 48 hours after a shot.

In Tyler County Howard Hall drilled a dry hole on the F. R. Broughman farm in Union district through the Injun sand to 1,862 ft.

Oriskany Gas Field

In Kanawha County Brawley Reid Oil & Gas Co.'s test on the A. L. Campbell farm in Poca district was completed at 5,262 ft. with the Oriskany sand topped at 5,232 ft. and a final gage of 3,181,000 cu. ft. a day. The second test on this farm is drilling at 4,600 ft. United Fuel Gas Co. completed the test on the B. C. Gillespie and others land at 5,265 ft. with the Oriskany topped at 5,247 ft. and a gage of 733,000 cu. ft. a day before the shot. This company is drilling at 4,752 ft. in the D. C. Ingram test; is testing casing at 4,866 ft. in the E. U. Dawson test; drilling in at 4,820 ft. in the A. A. Beane test; drilling at 4,065 ft. in No. 4853 W. H. O'Dell; at 518 ft. on the C. H. Sisson sand and is rigging up No. 4861 C. C. Fisher. Columbian Carbon Co. was drilling in on the A. H. Campbell farm, with Corniferous lime at 4,809 ft., Oriskany 4,917 ft. and a gage of 1,637,000 cu. ft. a day at 4,954 ft. This company made a location on the B. H. Richards and others farm in Poca district, elevation 1,026.2 ft., and is drilling at 4,091 ft. in the Tignor and Griffith test; at 4.095 ft. in No. 1 H. H. Parsons and at 1,535 ft. in No. 2 Parsons. Godfrey L. Cabot, Inc., is drilling at 1,993 ft. in No. 1 Poca Coal Land Co.; Spartan Gas Co. at 4,945 ft. in No. 1 J. S. and E. D. Newhouse with the Cornferous topped at 4,925 ft.; Glenn Oil & Gas at 3,188

(Continued on Page 90)

North and East Texas

By D. H. STORMONT

Deep Cut in Allowables Has Slowed Down Several Fields

WICHITA FALLS, Tex., Oct. 2.—A survey of the North Texas district reveals that due to the recent Railroad Commission order cutting back allowables on wells in new fields, activity has shown a considerable slowing down from its pace of 2 or 3 weeks ago. Hardest hit by the ruling were the Benton & Holmes pool of Montague County, Rogers & Rogers pool of the same county, Voth and Walnut Bend pools in Cooke County, and the Halsell and Burns pools in Clay County. Virtually every discovery area opened in the North Texas district in the 1½ years was given a cut in individual well allowable of from 100 to 500 bbl. daily. Practically all of the wells in the previously mentioned areas, as well as several other new areas in northern Archer County, had individual well allowables of from 100 bbl. to 1,079 bbl. daily. All of these were cut in daily production to about 40 bbl., the greatest decrease being in the Voth pool which was cut to an average of 22 bbl. daily per well. Most of the activity in these recently discovered pools has been suspended pending individual appeals to the Railroad Commission for higher allowables.

Plans were announced early last week for a deep wildcat in Archer County on the Falls County school lands. An old 2,508-ft. well will be deepened to the 5,000-ft. level in search of Strawn production. The well is in the Forgy subdivision of the Falls County land, Abstract 30, some 4 miles west of the town of Anarene. It is in the old shallow and semidepleted Falls County pool. It will be drilled by Perkins & Cullum of Wichita Falls. Another new deep wildcat location was staked in this vicinity of Archer County, W. B. Hamilton's No. 5 Graham estate. The location falls approximately 4,700 ft. south and 660 ft. east of the northeast corner of the F. C. Green land in the Joseph Levins Survey, Abstract 1249. It is a 5,200-ft. test about 1½ miles west of the town of Anarene and about 2½ miles east of the Perkins & Cullum deepening job.

Location for a deep test has been made on the east side of the Rogers & Rogers pool of northwestern Montague County, 1 mile west of the town of Nocona. Anderson-Prichard Oil Corp. staked location for No. 1 Mae Reed, 1,834 ft. south and 260 ft. east of the northeast corner of the Jacob Lenow Survey, Abstract 433, but in the J. D. Jennings Survey, Abstract 389. Location is on a 12-acre tract and is an east offset to the Rogers & Rogers No. 2 Burnett, a 1,000-bbl. well from the 4,300-ft. pay sand of the pool.

Clay County apparently lost another closely watched wildcat when Youngblood & Foree and the Ramsey Petroleum Corp.'s No. 1 R. F. Wynn, Block 2, G. Gowan Survey, 5 miles west of Bellevue, was temporarily abandoned at a total depth of 6,072 ft. Top of the Ellenburger lime was reported at 6,065 ft. After drilling to its total depth, the hole was plugged back to test sands from 5,495 to 5,503 ft. and from 5,520 to 5,530 ft. Neither sand showed commercial production and the test was temporarily abandoned.

In the Wilbarger County northwest extension area of the K.M.A. pool, Consolidated Oil Co.'s No. 1-DD Waggoner, Section 1, Block 7, H.&T.C. Survey, east of the discovery extension producer, was plugging back from 4,248 ft., where it failed to make a producer in the regular pay section, to 1,850 ft., to test a shallow sand.

NORTH TEXAS COMPLETIONS

Archer County

British American Oil Producing Co.'s No. 1 J. R. Parkey, 4,655-84 ft., 665 bbl. in 7 hours. L. T. Burns' No. 3 K. Ahrens, 4,254-4,314 ft., 520 bbl. Chapman & McFarlin's No. 1 L. F. Wilson B, 4,378-4,429 ft., 656 bbl. Chapman & McFarlin's No. 2 L. F. Wilson B, 3,847-59 ft., 1,328 bbl. Continental Oil Co.'s No. 1 L. F. Wilson McCrory, 4,300-60 ft., 1,200 bbl. Helmerich & Payne and Blackwell Oil & Gas Co.'s No. 4 L. F. Wilson, 4,360-84 ft., 736 bbl. Bert L. Ligon and Deep Oil Development Co.'s No. 4 T. J. Moss A, 1,681 ft., dry. Bert L. Ligon and Deep Oil Development Co.'s No. 7 T. C. Moss B, 1,281-92 ft., 81 bbl. Hamilton Petroleum Co.'s No. 4 C. E. Graham, 1,126-37 ft., 312 bbl. C. W. Snoddy's No. 1 M. Talbott, 1,430 ft., dry.

Clay County

Duncan and others' No. 3 T. P. Duncan, 1,139-62 ft., 10 bbl. Youngblood & Foree's No. 1 Mrs. Ida Wynn, 6,070 ft., dry.

Cooke County

Anderson and others' No. 1 Coursey & Stark, 2,065 ft., dry. Cox & Hamon's No. 5 K. New B, 4,895-4,929 ft., 828 bbl. Sinclair Prairie's No. 1 P. McGeorge, 4,939-65 ft., 259 bbl.

Cottle County

Magnolia Petroleum Co.'s No. 1 Alice Green, 6,142 ft., dry.

Jack County

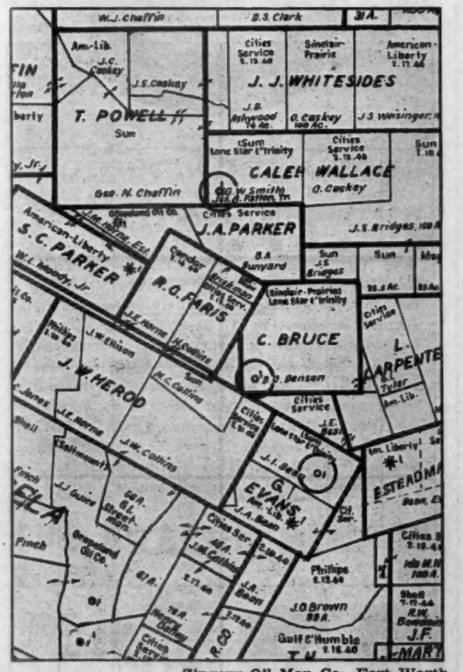
Buttram Petroleum Co.'s No. 4 J. A. Jones, 2,097 ft., dry. B. C. Gilmore's No. 8-A F. C. Bloodworth, 513 ft., dry. Hanlon-Buchanan, Inc.'s No. 1 J. F. Garrison, 2,737-49 ft., 100 bbl.

Montague County

Falls & Yeargin's No. 9 E. J. Bouldin, 756-95 ft., 10 bbl.

Wichita County

Fisher & Dudley's No. 8 Warren, abandoned location. Bob Holt's No. 1 Mrs. O. F. Bailey, 590 ft., dry. Magnolia Petroleum Co.'s No. 155 Hugh Reilly, 1,407-20 ft., 56 bbl. M. Staniforth's No. 5 Ed Reilly, 1,416-55 ft., 12 bbl. Bolin & Morganstern's No. 15 W. T. Waggoner, 1,572-76 ft., 45 bbl. Bolin & Morganstern's No. 17 W. T. Waggoner, 1,738-45 ft., 10 bbl. G. W. Cooper's No. 1-A N. H. Martin, 4,180 ft., dry. Perkins & Cullum's No. 2 Burnett and others, 672-76 ft., 10 bbl. J. E. Farrell's No. 5 Waggoner H, 3,752-97 ft., 504 bbl. Magnolia Petroleum Co.'s No. 2 R. L. Kempner A, 3,796-3,818 ft., 768 bbl. Sinclair Prairie's No. 4 N. H. Martin, 3,730-3,855 ft., 328 bbl.



Zingery Oil Map Co., Fort Worth

The Grapeland pool of northern Houston County is the scene of two 10,000-ft. tests just getting under way, three locations projected to the Woodbine gas and distillate pay were staked last week

Wilbarger County

Lido Oil Co.'s No. 21 W. T. Waggoner C, 3,635-60 ft., 765 bbl. Pois & Schulz' No. 1 D. B. Flaniken, 1,871-1,905 ft., 1,136 bbl. L. Webb's No. 1 W. T. Waggoner and others, 3,032 ft., dry.

Young County

Cable Oil Co.'s No. 44 L. A. Snider, 566-74 ft., 10 bbl. Holbrook, Woods & Mays' No. 1 J. W. Cox, 568 ft., dry. L. A. Long's No. 1 King & Wooten B, 3,857-75 ft., 402 bbl., 2,000,000 cu. ft. of gas. N. A. Meyer and others' No. 5 E. P. Cullers, 530 ft., dry. Trentman, Nunnellee & Ranken's No. 1 H. Brashear B, 3,980-4,020 ft., 12 bbl. Trentman, Nunnellee & Ranken's No. 1 J. K. Guinn, 2,734-61 ft., 531 bbl. Caddo Oil Co. and McLester's No. 1 J. W. Long, 900 ft., junked. N. B. Crenshaw's No. 2 S. R. Ragland A, 3,789-3,826 ft., 250 bbl. Homestead Oil & Gas Co.'s No. 2 G. C. Thedford, 4,327 ft., dry. C. Knox's No. 5 W. Worsham, 2,674-2,700 ft., 21 bbl.

EAST TEXAS

DALLAS, Tex., Oct. 2.—Activity in the eastern Texas area centered during the week on the Grapeland area of northern Houston County. Already the scene of two 10,000-ft. tests, announced 2 weeks ago, three additional Woodbine-projected tests have been staked in the Grapeland pool proper.

The three new locations were made jointly by Lone Star Gas Co. and Trinity Gas Co., both of Dallas. The wells are to be drilled by Harry Bass Drilling Co., Dallas, and materials are being moved to the locations for immediate drilling. The wells will be drilled on a 1,450-acre block unitized and turned to the two gas companies for the tests. Acreage was farmed out by Sun Oil Co., Sinclair Prairie Oil Co., and Cities Service Oil Co. Two of the locations are on original Sun leases, one being on the J. E. Bean fee land in the Green Evans Survey, with the site marked near the northwest corner of a 50-acre tract and offsetting American Liberty's producer on the Bean tract, and the other on the James A. Patton lands (formerly G. W. Smith) in the Caleb Wallace Survey with drill site near the southwest corner of an 80-acre tract. The third location is on the D. O. Denson land, formerly a Sinclair Prairie lease, and in the C. Breece Survey with the site being near the southwest corner of a 160-acre tract.

The Grapeland field has two active drilling wells at present. On the southwest side, Grapeland Oil Co.'s No. 1 Guice is preparing to drill ahead toward the Woodbine pay after setting casing at about 1,050 ft. On the north side of the field Cook Drilling Co. and Shell Oil Co., Inc.'s No. 1 Masters is preparing to start toward the 10,000-ft. level. About 2½ miles north of the field is the J. C. Wynne and Shell Oil Co., Inc.'s No. 1 Dorsey, another 10,000-ft. test which is preparing to get under way.

Three new wildcats were staked in the East Central Texas area, one each in Limestone, Red River and Van Zandt County. Bunn & Willis have started No. 1 Clyde

(Continued on Page 89)

Kansas Developments

By
DAL DALRYMPLE

Unite Trapp, Coralena Pools; Cowley Wildcat Has Oil Pay

The Trapp field in Russell and Barton counties, already one of the larger oil areas in Kansas, took in additional territory the past week when Gulf Oil Corp.'s No. 1 Everett, C W½ SW NE Section 20-15-13w, found production in Arbuckle lime. The well is ½ mile north of nearest production in the Trapp field and a similar distance south of the Coralena pool of Russell County, thus being the connecting link between the two areas. It topped Arbuckle lime at 3,321 ft., drilled to 3,322 ft. and 39.5-gravity oil rose 1,375 ft. in the hole in 5 hours, when it was shut in for production test.

Opening of a Bartlesville-sand area about 11 miles northeast of Arkansas City and 5 miles southwest of new Wilson-Arbuckle pool in Cowley County appeared imminent at Jock Garden and others' No. 1 Rahn, SW SW NW Section 13-34-5. Bartlesville sand was topped at 2,880 ft. and a 30-ft. oil zone with some saturation was found at 2,915-45 ft. Operators were drilling ahead toward Arbuckle lime, but were expected to plug back and test the Bartlesville after exploring the lower zones.

The Burrton pool was extended ⅝ mile eastward in Harvey County at Carl Hipple's No. 1 Frederick NW NW SW Section 17-23-3w, which made potential of 1,330 bbl. of oil from chat at 3,371 ft., total depth.

The Kansas allowable production for October was set at 170,600 bbl. of oil daily, the Bureau of Mines recommendation, by the the Corporation Commission, according to announcement of Theo A. Morgan, director of conservation. This is an increase of 23,395 bbl. daily over the September allowable.

Davis Gas Corp.'s No. 1 Jones, in the new shale-gas field in the Beagle area, 16 miles southwest of Paola, Miami County, was reported producing 1,850,000 cu. ft. of gas daily. Another sizeable producer also was completed the past week, but production figures were not available. Work was started at two additional tests, with Hal Lambeth and Jean Lemons having the contracts. The field was located on geology by Silas Brown and Walter Josselyn, with the Davis corporation.

Wildcat Operations

The Albert pool in western Barton County was extended ½ mile southeastward at W. H. Brimm and J. A. Aylward's No. 1 Dirks, C W½ SW NE Section 31-18-15w. It topped La Motte sand at 3,550 ft., had pay at 3,581-83 ft. and was bottomed at 3,585 ft. It pumped 54 bbl. of oil in 8 hours and made potential of 163 bbl. of oil, completed.

Jesse Cling and others' No. 1 Erickson, NE NE NE Section 28-16-3w, an old wildcat in Saline County, was deepened, had Viola lime at 3,330-75 ft., total depth, had nothing showing, and was abandoned. It was north of the Lindsborg pool in McPherson County.

S. L. Parks, Simpson & Bradley's No. 1 Fisher, NW NW NE Section 25-26-1e, Sedgwick County wildcat, had a hole full of water in Mississippi lime at 3,029-46 ft., total depth, and was abandoned.

J. R. Lowell and F. G. Holl's No. 1 Olsen, NE NE SE Section 13-35-7, wildcat in Cowley County, topped Arbuckle lime at 3,227 ft., had water in the hole and was abandoned at 3,241 ft.

Sackrider and others' No. 1 Allen, SE NE SE Section 13-21-15, Coffey County wildcat, found Wilcox sand at 1,920 ft., sulfur water intruded at 2,010-20 ft., and it was abandoned in sand at 2,222 ft.

Another Coffey County wildcat, B. O. Hollett and others' No. 1 Butler, SE SW SE Section 28-20-15, was drilling below 675 ft. and was due to set 10-in. pipe soon.

New wildcats: B. B. & M. Drilling Co.'s No. 1 Krier, C E½ SE SE Section 30-16-11w, Barton County, building rig; Bruce's No. 1-A fee, NW cor. Section 13-18-10, Lyon County, drilling 2,200 ft.; Gerald Smith's No. 1-B Haney, C E½ NW SW Section 9-35-6, Cowley County, rigging up rotary.

Russell County

Continental Oil Co.'s No. 6 Meharg, SW NW NE Section 17-15-13w, Coralena pool, Russell County, was completed for daily potential of 2,592 bbl. of oil at total depth of 3,241 ft. in Arbuckle lime.

Aylward Production Co.'s No. 1 Holl, NW NW SW Section 22-14-14w, Gurney area, drilled to 3,121 ft. in Lansing lime and made 24-hour potential of 2,591 bbl. of oil. Stanolind Oil & Gas Co.'s No. 2-A Krug, NW NW NE Section 27-14-14w, made potential of 1,331 bbl. of oil in 24 hours at total depth of 3,074 ft. in Arbuckle lime.

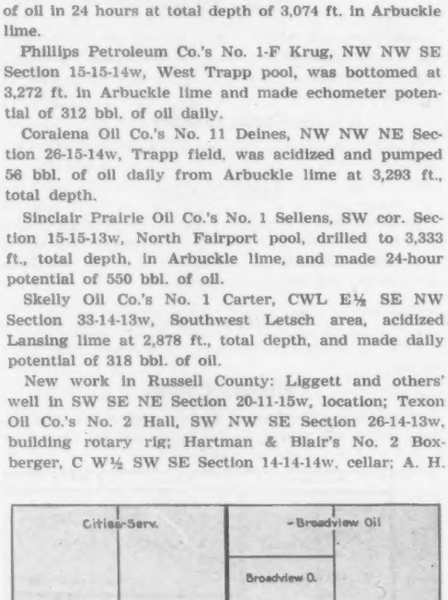
Phillips Petroleum Co.'s No. 1-F Krug, NW NW SE Section 15-15-14w, West Trapp pool, was bottomed at 3,272 ft. in Arbuckle lime and made echometer potential of 312 bbl. of oil daily.

Coralena Oil Co.'s No. 11 Deines, NW NW NE Section 26-15-14w, Trapp field, was acidized and pumped 56 bbl. of oil daily from Arbuckle lime at 3,293 ft., total depth.

Sinclair Prairie Oil Co.'s No. 1 Sellens, SW cor. Section 15-15-13w, North Fairport pool, drilled to 3,333 ft., total depth, in Arbuckle lime, and made 24-hour potential of 550 bbl. of oil.

Skelly Oil Co.'s No. 1 Carter, CWL E½ SE NW Section 33-14-13w, Southwest Letsch area, acidized Lansing lime at 2,878 ft., total depth, and made daily potential of 318 bbl. of oil.

New work in Russell County: Liggett and others' well in SW SE NE Section 20-11-15w, location; Texon Oil Co.'s No. 2 Hall, SW NW SE Section 26-14-13w, building rotary rig; Hartman & Blair's No. 2 Boxberger, C W½ SW SE Section 14-14-14w, cellar; A. H. Witt's No. 1-B Witt, SE SW SW Section 10-14-15w, drilling below 2,400 ft.; Central Petroleum Co.'s No. 1-A Rouback, C S½ NW NE Section 15-14-15w, location; Wolf Creek Oil Co.'s No. 4-B Rouback, C N½ SE NW Section 15-14-15w, cleaning out at 322 ft.; Ted Ferrier and others' No. 1 Kramer, SW NW SW Section 14-15-14w, cellar; Cities Service Oil Co.'s No. 2 Hennessy, C S½ S½ SW Section 26-15-14, drilling below 340 ft.; Darby Petroleum Corp.'s No. 14 Michaelis, C S½ N½ SE Section 36-15-14w, surface hole; Shell Oil Co., Inc.'s No. 8 Dumler, C S½ N½ SW Section 36-15-14w, cellar; Coralena Oil Co.'s No. 5 Sellens, C N½ S½ S½ Section 20-15-13w, rigging up rotary; W. I. Southern, Inc.'s No. 3-C Sellens, NW NE SE Section 29-15-13w, drilling below 705 ft.; Cities Service Oil Co.'s No. 2-A Tittle, SW SW SW Section 12-15-14w, rigging up rotary.



Midcontinent Map Co., Wichita

Laton pool in Rooks County was extended nearly 1 mile northward at Broadview Oil Co.'s No. 1 Baxter, Section 35-9s-16w, a Lansing-lime producer

Rice County

Initial daily potential of 2,523 bbl. of oil was made by Skelly Oil Co.'s No. 1 Smith, C S½ SE NE Section 28-19-10w, Lansing lime sector of the Silica field in Rice County. It was bottomed at 3,035 ft. in lime.

Estimated Daily Production

Estimated daily production for Kansas for the week ending September 30, and for the preceding week was as follows:

	Barrels	
	Sept. 30	Sept. 23
Oxford City	825	825
Burrton	9,650	9,750
Ritz-Canton	4,675	4,825
Graber	2,025	2,625
Hollow-Nikkel	1,925	2,175
Lerado	775	775
Voshell	1,775	1,700
Wellington	2,000	2,025
Ellsworth County:		
Lorraine	1,950	1,700
Other pools	1,875	1,395
Rice-Barton counties:		
Bloomer	2,925	3,400
Chase	3,900	4,050
Geneseo	3,025	3,700
Raymond	600	725
Silica	10,050	12,100
South Silica	2,075	2,000
Keesling	925	650
Wherry	3,525	4,225
Miscellaneous Rice	4,440	4,255
Miscellaneous Barton	8,445	9,080
Russell County	24,850	22,425
Sedgwick County	3,400	3,350
Ellis County:		
Bemis	5,000	6,725
Miscellaneous	4,055	3,515
Kingman County	850	780
Stafford County	7,515	6,635
Greenwood County	8,900	9,000
El Dorado	7,625	7,700
Other fields	27,645	28,390
Total Kansas	157,225	160,500

Stanolind Oil & Gas Co.'s No. 5 Manke, C S½ NE SE Section 28-19-10w, was acidized and made daily potential of 1,769 bbl. of oil in 24 hours from Lansing lime at total depth of 3,042 ft.

Skelly Oil Co.'s No. 1-D Bernstorf, C N½ SW SW Section 23-19-10w, drilled to 3,271 ft. in Arbuckle lime and made initial daily potential of 488 bbl. of oil.

In the Geneseo area, Continental Oil Co.'s No. 3 Warner, SW NW NW Section 6-19-7w, was completed for initial potential of 670 bbl. of oil daily from Arbuckle lime at total depth of 3,258 ft. Same company's No. 4 Ainsworth, SW NE SE Section 24-18-8w, was bottomed at 3,171 ft. in Arbuckle lime and made 24-hour potential of 2,124 bbl. of oil.

Five wells were completed in the Wherry district. Garden & Spencer's No. 1-B Hauschild, C E½ SE NE Section 22-21-7w, drilled to 3,405 ft. in conglomerate and made daily potential of 671 bbl. of oil. Bridgeport Machine Co.'s No. 6 R. R. Hauschild, C N½ SW NE Section 15-21-7w, made daily potential of 585 bbl. of oil at total depth of 3,380 ft. in conglomerate. Same company's No. 5 Hauschild, C S½ SW NE Section 15-

21-7w, was completed for 40 bbl. daily minimum allowable at total depth of 3,390 ft. in conglomerate. Darby Petroleum Corp.'s No. 2-A Oden, C N½ N½ NE Section 6-21-7w, at total depth of 3,340 ft. in conglomerate, made 24-hour potential of 1,008 bbl. of oil. Schneider, Gerbrand & Pulse's No. 1 Pollock, C W½ NW NW Section 26-21-7w, south of production in the South Wherry area, was dry and abandoned at 3,309 ft., total depth, in conglomerate.

McPherson Drilling Co.'s No. 3 Cramm, SW SE NW Section 15-19-9w, was rigging up rotary.

Ellis County

Shell Oil Co., Inc.'s No. 24 Rumsey, NW NE NE Section 23-11-17w, Bemis field, Ellis County, was bottomed at 3,437 ft. in Arbuckle lime and made depthograph potential of 3,500 bbl. of oil daily, top limitation, on retest.

Dickey Oil Co.'s No. 4 Carmichael, C S½ SW NW Section 18-11-17w, South Burnett pool, made 24-hour potential of 3,500 bbl., top limitation, at total depth of 3,337 ft. in Arbuckle lime. Phillips Petroleum Co.'s No. 3 Hendricks, C S½ NE NE Section 13-11-18w, was acidized and made top potential of 3,500 bbl. of oil daily from Arbuckle lime at total depth of 3,264 ft.

Cities Service Oil Co.'s No. 2 Colahan, NW NW SW Section 24-11-17w, Bemis field, was completed for depthograph potential of 3,500 bbl. of oil, top limitation, after acid treatment. It was bottomed at 3,449 ft. in Arbuckle lime.

First reports on new tests in Ellis County: Darby Petroleum Corp.'s No. 4 Henderson, C N½ SE NW Section 7-11-17w, location; Shell Oil Co., Inc.'s No. 26 Rumsey, NW SW NE Section 23-11-17w, location; Skelly Oil Co.'s No. 1 Koblitz, C E½ SE NE Section 22-12-18w, set casing and waiting on cement at 120 ft.; Doley Oil Co.'s No. 1 Stackhouse, SW SE NW Section 23-12-18w, location.

Barton County

C. Elmer Ash and Crown Petroleum Co.'s No. 1 Schartz, SE SE NW Section 12-20-12w, West Ellinwood pool, Barton County, was acidized and made initial daily potential of 127 bbl. of oil. It was bottomed at 3,263 ft. in Arbuckle lime.

Shell Oil Co., Inc.'s No. 9-A Hoffman, SW cor. Section 7-16-13w, South Trapp area, was treated with acid and made depthograph potential of 2,622 bbl. of oil daily at total depth of 3,206 ft. in Arbuckle lime.

Broderick & Gordon's No. 1 Kowalsky, CEL SE NE Section 30-20-11w, ½ mile south of the Hagen pool discovery well, was dry and abandoned in Arbuckle lime. Shell Oil Co., Inc.'s No. 1-B Schneider, C NW¼ Section 16-18-15w, east of the Albert pool, was dry and abandoned at 3,613-28 ft., total depth, in Arbuckle lime.

Sinclair Prairie Oil Co.'s No. 4 Prusa, SE SE NE Section 20-16-11w, set surface casing and was waiting on cement at 103 ft. Transwestern Oil Co.'s No. 1-A Pospishel, C E½ NW SW Section 31-17-15w, was a location. E. R. Rabon's No. 1 Ford, SE NE SW Section 7-18-15w, was a location.

Stafford County

Stanolind Oil & Gas Co.'s No. 3 Harbeson, CSL NW¼ Section 11-24-11w, Zenith field, Stafford County, was completed at 3,730 ft., total depth, in Misener sand. After application of bottom-hole pressure, it made top limit potential of 5,000 bbl. of oil daily.

Same company's No. 5-A Siefkes, C NE¼ Section 3-22-12w, South Sittner pool, was completed for 24-hour potential of 2,304 bbl. of oil from Arbuckle lime at total depth of 3,598 ft.

Ellsworth County

Continental Oil Co.'s No. 3 Buehler, C E½ E½ NE Section 33-17-8w, Edwards pool, Ellsworth County, drilled to 3,222 ft. in Arbuckle lime and was completed for daily potential of 2,001 bbl. of oil.

Harvey County

Carl Hipple's No. 1 Frederick, NW NW SW Section 17-23-3w, Burrton field, Harvey County, made initial potential of 1,330 bbl. of oil in 24 hours from Arbuckle lime at 3,371 ft., total depth.

Same operator's No. 1 Howell, SW SW NW Section 17-23-3w, was moving in material.

First Reports

In Jefferson County, Haworth and others' No. 1 Mosbacker, SE SE NW Section 4-10-20, wildcat, was

(Continued on Page 34)

Thicknesses from 1/64" to 1/4". Sheets 40" x 40" and larger.

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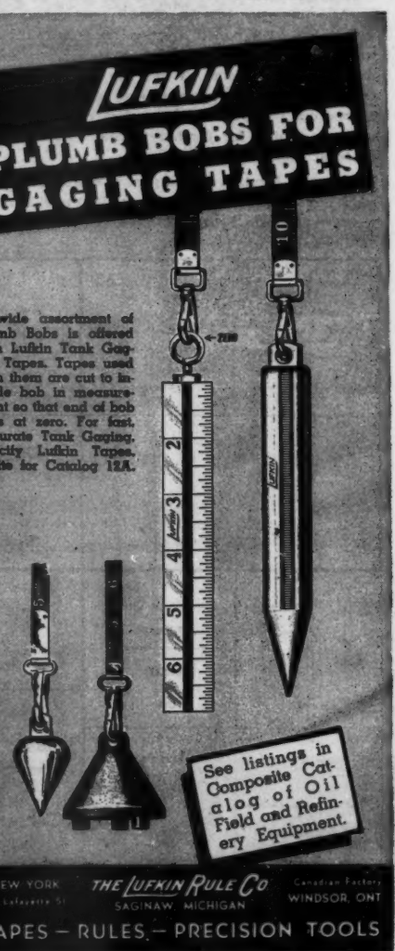

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TAPES — RULES — PRECISION TOOLS

Deep Pay in North Cowden; Open Pool in Nolan County

By
D. H. STORMONT

MIDLAND, Tex., Oct. 2.—The indication of a second producer from the deep-lime pay at the north end of the North Cowden pool in Ector County, together with the extension of the Permian-lime pay in the Tubbs area of Crane County, 2½ miles to the north, led the development in the West Texas district during the past week. Field activity continued on the upturn as new completions and new locations both showed an increase over the previous week.

Added importance to the deep-lime pay found several months ago on the north end of the North Cowden pool of Ector County by Gulf Oil Corp.'s No. 1 Holt was seen last week when Stanolind Oil & Gas Co.'s No. 1-A Blakeney, Section 28, Block 43, T.&P. Survey, about 3 miles southeast of the discovery well, drilled into the pay section. Acid treatment is scheduled for the well, which found the deep pay at 5,120-40 ft., some 24 ft. higher, structurally, than in the Gulf's discovery well. Due to the fact that Stanolind's No. 1-A Blakeney was drilled with a rotary, no test will be attempted until the hole is cleaned out. Gulf's No. 1 Holt had been drilled with cable tools and found its pay at 5,148 ft. It was drilled to 5,200 ft., but was completed at a plugged-back total depth of 5,168 ft. and produced 217 bbl. daily initially. Production has held up steady and it is still classed as a flowing well. A wide area for deep exploration will be opened should the Stanolind test be made a commercial producer.

In Crane County a 2½-mile spread was given the Permian-lime pay of the Tubbs pool when Gulf Oil Corp.'s No. 11 Waddell, Section 20, Block 21-B, P.S.L. Survey, was reported to have swabbed and flowed 143 bbl. of oil in 24 hours. When the tubing plugged, following the 24-hour gage, it was pulled and the hole cleaned out. The operator was last reported preparing to rerun tubing for further testing. The hole is bottomed at 4,680 ft. in lime.

Fifth new location in the past two weeks was staked in the new Apco (Ordovician producing) pool in northern Pecos County. It is the Childress Royalty Co.'s No. 1 J. S. Masterson, 1,980 ft. from the northeast and southeast lines of Section 104, Block 10, H.&G.N. Survey The test is a southeast offset to Anderson-Prichard Oil Corp. and Monte Warner's No. 1 M. E. Masterson, discovery well in the pool. The acreage for the test was farmed out from the I. T. I. O. company, which retained a one-quarter override.

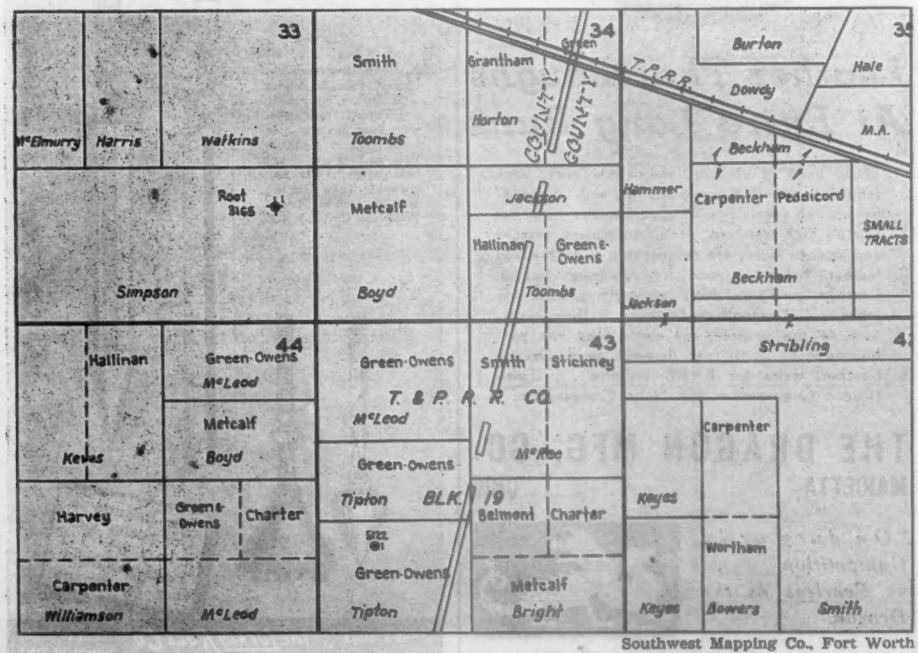
First producer in the Big Lake, Ordovician oil pool in Reagan County, since 1935 was completed last week by the Big Lake Oil Co. as its No. 17-C University. Located on the northeast edge of the deep pool, 1,282 ft. south and 1,446 ft. east of No. 13-C University, an old producer, it flowed 47½ bbl. of oil the first hour, 45 bbl. the second hour and 42 bbl. the third hour of a 3-hour test. No. 17-C University topped the Ellenburger-lime pay at about 8,260 ft. and is bottomed at 8,269 ft. where it has been treated with 3,000 gal. of acid. Three-inch tubing is scheduled to be run for further testing.

Reeves County's closely watched wildcat test, Forest Development Corp.'s No. 1 E. Scott, C SE¼ Section 286, Block 3, H.&G.N. Survey, and 11 miles east of Balmorhea, encountered salt water at 5,333-36 ft. in the Delaware sand and the hole was scheduled to be plugged back for testing in an upper sand. The zone between 4,900 and 4,928 ft. will be shot. A showing of gas was found from 4,895 to 4,905 ft. and a slight showing of gas and stains of oil from 4,905 to 4,912 ft.

North Basin

In the North Permian basin Stanolind Oil & Gas Co.'s No. 1 J. B. Rayner, Gaines County pool opener, will be offset by Stanolind's No. 1 American Warehouse Co., 600 ft. from the south and east lines of Section 5, Block H, D.&W. Survey, and a quarter mile west of No. 1 Rayner. The Rayner well was completed as a new pool opener when it made 1,279 bbl. daily on air lift from a lime pay in a section from 4,646 to 4,760 ft.

The Seminole pool, also in Gaines County, which has been relatively inactive for a few months, has three wells in the testing stage. Osage Drilling Co. has staked a location 1¼ miles north of the most northwestern part of the pool. It is for No. 1 Johnson, 660 ft. from the south and east lines of Section 268, Block G, W.T. Survey. Osage Drilling Co.'s No. 1-A Tippett, Section 266, a quarter-mile-west outpost to the field proper, flowed 546 bbl. of oil in 12½ hours through open 2-in. tubing and produced gas at the rate of 1,000,000 cu. ft. per day. The well had been acidized with 2,000 and 6,000 gal. at a total depth of 5,289 ft. The same operator's No. 1 Crain, Section 216, Block G, W.T. Survey, ¼-mile-northwest outpost to the most northwestern producing area of the field, was reported swabbing 3 bbl. of oil hourly from a total depth of 5,320 ft. It had been acidized with 8,200 gal. Ohio Oil Co. completed No. 1 Gibbs, 1¼ miles northwest of the pool proper, and in Section 230, for 767 bbl. of oil in 17 hours through ¼-in. tubing choke with an estimated 400,000 ft. of gas daily. The flow was made at 5,268 ft.



Southwest Mapping Co., Fort Worth

Green & Owens opened a pool, and the first commercial production, in Nolan County when No. 1 Tipton flowed an estimated 450 to 500 bbl. daily from Strawn pay from 5,135-38 ft.

WEST TEXAS FIELD COMPLETIONS

(24-hour gages)

Andrews County

In the Means pool Adams & Bradley No. 1 University, 4,198-4,295 ft., 1,290 bbl.

Crane County

In the McElroy pool, Gulf Oil Corp.'s No. 11 McElroy, 2,780-2,986 ft., 122 bbl. (old well drilled deeper). Gulf Oil Corp.'s No. 201 McElroy, 2,720-2,898 ft., 1,489 bbl.

In the Tubbs pool Humble Oil & Refining Co.'s No 30 J. B. Tubbs, 4,260-4,420 ft., 1,741 bbl.

In the Dunes pool Snowden & McSweeney's No. 6 University, 3,527-82 ft., 375 bbl.

Crockett County

In the Crockett pool Gilcrease Oil Co.'s No. 2-14 University, 1,415-70 ft., 19 bbl. Gilcrease Oil Co.'s No. 8-16 University, 1,365-1,487 ft., 12 bbl. (old well drilled deeper).

Ector County

In the Foster pool Arrow Drilling Co.'s No. 16 H. C. Foster, 4,150-4,310 ft., 1,499 bbl. Stanolind Oil & Gas Co.'s No. 18-A E. F. Cowden, 4,020-4,140 ft., 533 bbl. Stanolind Oil & Gas Co.'s No. 24-A E. F. Cowden, 4,025-4,165 ft., 1,283 bbl. Stanolind Oil & Gas Co.'s No. 25-A E. F. Cowden, 4,035-4,160 ft., 587 bbl. Sunray Oil Co.'s No. 2-G Witcher, 3,948-4,165 ft., 2,053 bbl. York & Harper's No. 5-B H. C. Foster, 4,196-4,287 ft., 408 bbl. York & Harper's No. 7-D Foster, 4,195-4,295 ft., 1,520 bbl.

Gaines County

New pool discovery, Stanolind Oil & Gas Co.'s No. 1 J. B. Rayner, 4,661-4,770 ft., 1,279 bbl.

Scurry County

In the Sharon pool Ordovician Oil Co.'s No. 3 Thompson, 2,401-55 ft., 169 bbl.

Pecos County

In the Apco pool Anderson-Prichard Oil Corp.'s No. 1 Masterson, total depth of 4,595 ft., cleaned out and acidized and recompleted for a daily potential of 572 bbl.

In the Tobarg pool Cardinal Oil Co.'s No. 54 E. Tippett, 405-23 ft., 92 bbl.

In the Fromme area Culbertson & Irwin & Street's No. 2 Fromme, 1,427-40 ft., 39 bbl.

In the Masterson pool Oliver & Cowden's No. 3 J. S. Masterson, junked and abandoned at 1,501 ft. J. L. Rush's No. 1 J. S. Masterson, dry and abandoned at 1,534 ft.

In the Pecos Valley pool Kone Production Co.'s No. 13 Pecos Valley, 1,555-1,636 ft., 107 bbl. Mid-Continent

SMALL CAPACITY EQUIPMENT

Although Reda's most prominent successes have been in wells of high capacity, small capacity Reda units have been equally as successful.

The daily production of many wells with capacities and allowables less than 20 barrels per day has been regularly pumped by Reda for several years. These units invariably give the operator more profit because of Reda's extremely low first cost and lower lifting cost.

We specialize in small-capacity equipment for prorated wells.

REDA PUMP CO.

BARTLESVILLE, OKLA.

THE ONLY SUBMERGIBLE ELECTRICAL CENTRIFUGAL OIL WELL PUMP

Petroleum Corp.'s No. 9 Jasper County Realty Co., 1,538-1,685 ft., 118 bbl. Ward Pecos Petroleum Co.'s No. 3-B, 4-C, 6-F Pecos Valley, temporarily abandoned locations.

Tom Green County

A wildcat, H. A. Ringle's No. 1 L. Seal, dry and abandoned at 1,625 ft.

Upton County

In the McCamey pool Basin Oil Co. No. 12-B Baker, 2,283-2,318 ft., 652 bbl. Gulf Oil Corp.'s No. 1 Rogers, 2,121-2,213 ft., 79 bbl. (old well drilled deeper). Shell Oil Co., Inc.'s No. 1 Rogers, 2,578-2,680 ft., 133 bbl. (old well drilled deeper). Soto Oil Co.'s No. 2 Robbins, 2,214-89 ft., 30 bbl.

Ward County

In the Estes pool Gulf Oil Corp.'s No. 114 O'Brien, 2,540-2,775 ft., 109 bbl. Gulf Oil Corp.'s No. 115 O'Brien, 2,654-2,780 ft., 1,028 bbl.

Winkler County

In the Keystone pool M. J. Brashara & Son's No. 3 fee, 3,063-3,223 ft., 175 bbl. Gulf Oil Corp.'s No. 72 Daugherty, 2,900-3,022 ft., 848 bbl. Gulf Oil Corp.'s No. 33 Keystone Cattle Co., 3,240-3,402 ft., 442 bbl.

Yoakum County

In the Wasson-Bennett pool Aloco Oil Co.'s No. 2 Hovencamp, 4,950-5,111 ft., 1,899 bbl. Aloco Oil Co.'s No. 1 W. S. Knight, 4,940-5,344 ft., 773 bbl. Aloco Oil Co.'s No. 6-A Annie Miller, 4,947-5,158 ft., 856 bbl. Basin States Oil Co.'s No. 2 Hague, 4,946-5,180 ft., 940 bbl. Continental Oil Co.'s No. 2 Lloyd Dowell, 4,970-5,130 ft., 751 bbl.

Honolulu Oil Corp.'s No. 1-804 Carter Wilder, 4,963-5,155 ft., 1,285 bbl. Humble Oil & Refining Co.'s No. 19 Wooten, 4,958-5,110 ft., 986 bbl. Magnolia Petroleum Co.'s No. 8 Bennett, 5,165-5,243 ft., 426 bbl. Milhoan Production Co.'s No. 3 Willard, 4,918-5,192 ft., 1,358 bbl. Shell Oil Co., Inc.'s No. 10-C Baumgart, 4,900-5,160 ft., 994 bbl. Shell Oil Co., Inc.'s No. 8-E Baumgart, abandoned location. Sinclair Prairie Oil Co.'s No. 3-A Kendrick, 5,029-5,163 ft., 1,908 bbl.

PANHANDLE FIELD COMPLETIONS

Carson County

Magnolia Petroleum Co.'s No. 59 fee No. 224, 2,969-3,102 ft., 219 bbl.

Gray County

Monston Oil Co.'s No. 8 R. Sullivan, 3,135-3,253 ft., 548 bbl. Phillips Petroleum Co.'s No. 3 J. T. Benton, 3,145-3,317 ft., 164 bbl. Phillips Petroleum Co.'s No. 5 B. M. McKinney, 3,136-3,241 ft., 201 bbl.

Hutchinson County

Phillips Petroleum Co.'s No. 23 J. J. Perkins, 2,955-87 ft., 134 bbl.

Wheeler County

Columbian Fuel Corp.'s No. 6 W. E. Bentley, 2,238-2,336 ft., 30 bbl.

WEST CENTRAL TEXAS

FORT WORTH, Tex., Oct. 2.—Discovery of a new oil pool and the first commercial production in Nolan County led the development in the West Central Texas district over the week past. The new pool opener is the Green & Owens' No. 1 S. C. Tipton, center of a 5,400-acre block and in Section 43, Block 19, T.&P. Survey.

The wildcat drilled Strawn sand at 5,135-38 ft. and despite 1,400 ft. of water in the hole made several heads of oil in a 12-hour period. On a 6-hour test the well showed 116 bbl. of oil and 2 bbl. of water, the flow having been made through 900 ft. of open hole and 3,000 ft. of water. Reports from the well estimate that it will make approximately a 450-bbl. producer. Operators are awaiting the arrival of 4-in. casing. The well was started more than a year ago and has indicated production at several different levels in the past 10 months. Metcalf & Hallinan, of New York City, are associated with Green & Owens in the well, Metcalf holding acreage adjoining the well.

Centering the attention in Shackelford County as the week closed was the staking of a 4,800-ft.-deep Ordovician wildcat on the Black ranch in the northeastern part of the county. The well will be drilled by Georgian Oil Corp., of Gilmer, and the projected horizon will be the Ellenburger lime. Location falls in the C NE¼ of T.E.&L. Survey, Abstract 390, some 10 miles northeast of Albany, in Shackelford County. Georgian Oil Corp., which has leased the entire 7,500-acre Black ranch, also made locations for six shallow wells on the property. In the western corner of T.E.&L. Survey 394 there is an abandoned well drilled in 1919, which is reported to have shown 50-bbl. production in a lime from 4,030 to 4,065 ft.

Completion of a large gas well by Lone Star Gas Co. in the eastern part of Coleman County led the developments of the week from that sector. The well, No. 1 L. L. Baker, was acidized with 2,000 gal. at 2,302 ft., in Ranger lime, and was being allowed to clean itself. Production is estimated at about 4,500,000 cu. ft. of gas daily. Location is in the southwest corner of the south 160 acres of the 320-acre Baker lease in the southwest part of the Marianna Fisk Survey 630.

Holding the attention of operators in Brown County as the week closed was Derrick & Boyer's No. 1 C. V. Harris, Prosper Mangle Survey, just west of the old Brownwood pool in the central part of Brown County. The test drilled 81 ft. into the Ellenburger lime topped at 2,046 ft. and may be drilled on through the Ellenburger. Total depth is 2,125 ft. It is shut down, awaiting orders to deepen. No water has been encountered since 780 ft. The well made showings of oil and gas in the Ranger section but neither was sufficient for commercial production.

Jack County received four new deep locations during the week. All were in proven territory, two in the Bryson pool and two in nearby areas. Activity in Jack County has shown a considerable drop during the past 2 weeks, there being only a few deep tests and comparatively few shallow tests drilling in the once active grass-roots area around Antelope. There are still several spudders seeking the shallow production in the Antelope area, but the activity is practically limited to proven or semiproven drilling.

The Griffin pool in Jones County which produces from Palo Pinto lime, was given a west extension by Consolidated Oil Co.'s No. 1 R. L. Hines which cored into the lime at 3,162 ft. and found saturation at 3,265 ft. Pipe is being set for completion, and the rig was skidded a location north for another well. In the same pool and southeast of the Avoca gin lot, Algord Oil Co. staked location and planned to skid to No. 1 J. C. Williams. Robertson & Bradford will move in a rotary this week for No. 1 J. C. Williams, south of the Consolidated No. 1 Hines.

In Jones County, and definitely indicating a small oil pool, Ralph R. Carroll's No. 2 Herndon, Section 3, League 359, Goliad County School Lands, has been placed on the pump with an estimated daily initial of from 50 to 75 bbl. The well is an offset to one drilled earlier in the year but which failed as a commercial producer due to ineffective water shutoff.

In Shackelford County, the second producer in the new shallow pool a mile southeast of Albany is B. & F. Bonded Cotton Warehouse Co.'s No. 1 Jennie P. Clarke and others, pumping 34 bbl. of oil daily from sand drilled from 606 to 622 ft. It is 300 ft. north of No. 1 Emma Spell, the discovery well. The new producer is 750 ft. from the west and 150 ft. from the south lines of Section 3, B.A.L. Survey. Operators have moved to a diagonal offset northwest of No. 2 Clarke, which is now drilling at 200 ft.

WEST CENTRAL TEXAS COMPLETIONS

Coleman County

Lone Star Gas Co.'s No. 1 L. L. Baker, acidized with 2,000 gal. at 2,302 ft. and flowed 4,500,000 cu. ft. of gas daily.

Jones County

Ralph R. Carroll's No. 2 Herndon, pay section at 2,897 ft. and pumped 75 bbl. of oil daily. Fain-McGaha Oil Corp.'s No. 3 H. W. Ferguson, 1,881-96 ft., 265 bbl. daily. Harry B. Dennis' No. 1 H. O. Wooten, plugged and abandoned at a depth of 2,000 ft. after finding slight showings of oil from 1,963-71 ft. Condor Petroleum Co.'s No. 24 Henry Sayles, 1,969-86 ft., 367 bbl. daily. Jones & Stasney's No. 1 Jacob Muehlstein, dry and abandoned at a total depth of 3,550 ft.

Haskell County

P. S. Kendrick and Groover & Rose's No. 1 T. G. Hendrick, plugged and abandoned at a total depth of 3,260 ft.

Shackelford County

Algord Oil Co.'s No. 4 E. P. Swenson, 3,173-84 ft., 3,000 bbl. daily. B. & F. Bonded Cotton Warehouse Co.'s No. 1 Jennie P. Clarke, 606 to 622 ft., pumped 34 bbl. daily. West, Honea & Yates' No. 1 De Etta Martin, 3,189-93 ft., 2,400 bbl. daily.

Oklahoma Fields

(Continued from Page 66)

Creek County

W. M. Dunn's No. 1 Anthis, SE NW SE Section 34-14-10, Dunn area, Creek County, drilled Wilcox sand at 3,281-3,300 ft., total depth, water intruded and it was plugged back to 3,296 ft. After a shot, it swabbed 75 bbl. of oil in 24 hours, then pumped 40 bbl. daily.

Mid-Co Oil Corp.'s No. 1 Harvey, C SW NW Section 35-17-10, an old well being deepend from 1,667 ft., was drilled below 2,585 ft. Chapman's No. 1 McNac, NE SW SE Section 35-15-10, had dug cellar and pits. Stekoll's No. 1 Davidson, SE NE NW Section 6-19-8, an old well being deepened from 2,832 ft., was fishing at 2,850 ft.

Payne County

Home Gas Co.'s No. 1 Mohler, NE NW SE Section 35-18-4, March area, Payne County, was completed for 7,000,000 cu. ft. of gas daily from Skinner sand at 3,455-64 ft., total depth.

Amerada Petroleum Corp.'s No. 4 Fruin, C E½ SE NW Section 12-17-1e, was a location. Mid-Continent Petroleum Corp. and others' No. 7 Brandon, SW SE NE Section 13-18-1e, had dug cellar and pits, and same operators' No. 12 Ramsey, SE NE NW Section 18-18-2e, was a rig.

In Lincoln County, Wilcox Oil & Gas Co.'s No. 5 School Land, SW NW SE Section 16-14-6, was a rig.

In Osage County, Olson Oil Co.'s No. 2 Osage, NE SE NE Section 24-26-4, and Magnolia Petroleum Co.'s No. 6 Osage, SW NE NW Section 23-26-6, were locations.

Noble County

Stanolind Oil & Gas Co. and others' No. 1 Sharp, C NW NW Section 34-20-2w, an old well in the Lucien field, Noble County, was plugged back from 5,083 ft. to 4,027 ft., perforated at 3,390-65 ft., flowed 111 bbl. of oil in 19 hours, then flowed 69 bbl. in 24 hours.

Sun Oil Co.'s No. 1 DeVore, SW NW NW Section 27-22-2w, an old well in the Polo pool, originally bottomed at 4,925 ft., was plugged and redrilled to Layton sand at 3,810 ft., total depth 3,827 ft. It was shot and pumped 15 bbl. of oil and 75 bbl. of water daily.

Oklahoma County

Indian Territory Illuminating Oil Co.'s No. 7 Watters, SE NW NE Section 25-11-3w, Oklahoma City field, Oklahoma County, found lower Hoover series at 4,070-95 ft., total depth, and plugged back to 4,030 ft. After a shot at 4,086-94 ft., it pumped 7 bbl. of oil and 75 bbl. of water daily.

Southwestern Oklahoma

Johnson & Rollins' No. 2 McKenna, SE NE SW Section 3-5-9w, Block 27, Cement townsite, Caddo County, flowed 342 bbl. of oil in 4 hours, through tubing, and was completed for daily potential of 2,052 bbl. Noble-Olson sand was topped at 3,265 ft., total depth 3,433 ft.

Magnolia Petroleum Co.'s No. 1 McKenna, NE NW SE Section 11-5-9w, an old well in Cement field, was deepened from 2,613 ft. to 4,003 ft., had several sands and pumped 149 bbl. of oil in 24 hours.

Carl Carter's No. 3-B Spears, SE SE NW Section 15-1s-5w, Velma area, Stephens County, pumped 6 bbl. of oil daily and was completed in sand at 709-21 ft., total depth.

Magnolia Petroleum Co.'s No. 1 Miller, NE NE NE Section 28-3n-5w, an old well in the Knox field, Grady County, was deepened from 1,895 ft. to 2,650 ft., perforated casing and flowed 70 bbl. of oil daily.

In the Altus area, Jackson County, Cole's No. 1-A fee, SW SE SE Section 34-2n-20w, was dry and abandoned at 1,672 ft.

In Carter County, Shell Oil Co., Inc.'s No. 26 Johnson, SE SE SW Section 4-4s-3w, was dry and abandoned at 1,074 ft.

New operations: Armer's No. 1 Dowe, CSL NW NW Section 30-1n-8w, Stephens County, location; Phillips Petroleum Co.'s No. 1 Oaks, NE NE SE Section 34-6-10w, Caddo County, drilling with rotary below 155 ft.; Gulf Oil Corp.'s No. 1 Fowler, SW NE SW Section 9-1n-20w, Jackson County, shut down at 100 ft.; Burnham's No. 1 Abernathy, SW SW NE Section 11-1n-20w, drilling below 239 ft.; Vaughn's No. 7 Stokes, C N½ SE SW Section 11-1n-20w, location.

Southwest Texas District

By F. L. SINGLETON

Gas Field Opened in Victoria County Will Start Campaign

CORPUS CHRISTI, Tex., Oct. 2.—Operators in the Southwest Texas district focussed their attention on Victoria County following the opening of a new gas field, 4 miles west of the Coletto Creek field, and the testing of another prospective pool opener, just 5 miles southeast of the new strike. Other areas attracting attention as the week closed included the Odem prospect, San Patricio County, southern Goliad County, and the Ben Bolt area, Jim Wells County.

Houston Oil Co. opened a dry gas field, 4 miles west of the Coletto Creek field, Victoria County, with the completion of No. 1 Jacob Hornstein. While no potential test had been made, the well is shut in with the tubing pressure at 1,025 lb. and casing pressure 1,140 lb. The hole is bottomed at 3,041 ft. with 5½-in. casing cemented at 3,028 ft. Production was obtained by perforating the casing in a sand section cored at 2,858-2,929 ft. Due to short-term leases, the area is scheduled to receive an active drilling campaign. Location was made by the company for No. 1 Martin, Lot 42, McKinnon Survey, 1,300 ft. east of the discovery, while tentative location is reported to have been made ½ mile south on the Ed Dietzel lease. For the time being, development will be confined to the 2,800-2,900-ft. sand, although the chances of developing production from a deeper sand are considerable favorable.

Midway between the Coletto Creek and McFaddin fields, and about 5 miles southeast of the above well, Trinity Drillers, Inc., and John Mayo's No. 1 T. C. Edwards, in the Rodriguez Survey, which was scheduled for abandonment last week at 6,010 ft., is being prepared for a production test. The operators decided to test the well after an electrical survey showed four possible producing horizons between 2,900 ft. and 5,990 ft. A string of 5½-in. casing was cemented on bottom, and the first test is scheduled to be made at 5,800-09 ft. and 5,979-90 ft., where the survey indicated oil sands. The upper sand showed saturation by side-wall cores, while no cores were obtained of the lower section. Should the well fail to produce from the above-mentioned sands, the hole will be plugged back and a series of tests made of the shallower sands, which are reported to have shown gas. The well is on a farmout lease from the Shell Oil Co., Inc.

Several miles northeast of the above well, Renwar Oil Co. is reported to be moving in material for a deep well, about 1 mile south of the company's No. 1 Weaver, a recent dry hole. Southwest of the Fordtran gas field, Wellington Oil Co. and Jack Frazier's No. 1 J. W. Boothe, T.&N.O. Survey, Block 1, Section 10, a Tertiary-Wilcox test, was spudded.

In the sotuhern portion of Goliad County, D. C. Matthews and others' No. 1 G. J. Swickheimer, Cuadrilla Irrigation Co. Survey, is bottomed at 3,512 ft., and casing has been cemented to complete it as a gasser. Soft sand was logged at 2,840-64 ft., and on a 2-minute drill-stem test, the well showed 450 lb. of working pressure through various chokes. It is on a farm out lease from the Shell Oil Co., Inc.

San Patricio County

Two miles southwest of the town of Odem, San Patricio County, Seaboard Oil Co. is preparing to test No. 1 M. O. Smith. The hole is bottomed at 7,296 ft., and 5½-in. casing was cemented at 7,105 ft. to test a series of sands logged by an electrical survey and confirmed by side-wall cores. The side-wall cores showed the following results: Gas sand, 2,083 ft.; shaly sand, oil odor, 5,377-88 ft.; shaly sand, oil odor, 5,429-39 ft.; sandy shale, oil odor, 5,628 ft.; sand, oil odor, 5,920-24 ft.; sand, oil odor, 6,200-03 ft.; sand, distillate taste, 6,984-86 ft.; sand, oil odor, 7,044-53 ft.

The East White Point field continues to be the most active area in the district. Two oil wells were added in the past week, while several others were in the process of completion. The new oil wells included Plymouth Oil Co.'s No. 1 Hutton, and Humble Oil & Refining Co.'s No. 5 Countiss. Both wells were average producers in the 5,600-ft. sand. In the extension area of Corpus Christi Bay, Sinclair Prairie Oil Co. spudded Nos. 1 and 2 State, while 10 other operations were reported in the field proper.

In Jim Wells County, 1 mile southwest of the Ben Bolt field, Rutherford and Royal Oil & Gas Co.'s No. 1 Garcia is reported to have made a squeeze job following a drill-stem test through perforations. This well was drilled to a total depth of 6,015 ft., and failed to find the Ben Bolt field pay. Seven-inch casing was cemented at 4,705 ft. following an electrical survey which showed possible sands at 3,600 ft., 3,800 ft., and 4,100 ft. Details as to where the well was tested were not released by the operators.

Another outpost well in San Patricio County being watched with interest is Rodney DeLange and others' No. 1 McNeil, 1 mile south of the Wade City field. The well is drilling ahead below 4,800 ft. following a 4½-minute drill-stem test which showed 450 lb. of working pressure and several feet of gas-cut drilling mud. The well is reported to be checking about 20 ft. higher than Quinn and others' No. 1 Pundt, the discovery well, completed as a distillate producer at approximately 4,800 ft.

The county gained an interesting wildcat prospect as Kalb, Decker and Housh & Thompson staked location for No. 1 Theresa M. Gallagher estate, 3 miles southeast of Sandia, Block 16, J. H. Gallagher subdivision, in the Juan de la Garza Montemayor grant. Location for a third test was made in LaGloria field as Magnolia Petroleum Co. made a location for its third well. It is on the Vivian Rust lease, in northern Brooks County, just across the Jim Wells County line, approximately 1 mile south of the discovery well. Magnolia Petroleum Co. continues to test No. 1 Dale Maun, which opened production from a new horizon several weeks ago. The well is about 1 mile west of the discovery well.

A new field on the Cockfield trend in eastern Duval County was in the making as Standard Oil Co. of Texas cemented casing in No. 1 Jack Casey, on the Sejita prospect, 7 miles southeast of the town of Realitos in the San Pedro de Charco Redondo grant. The hole is bottomed at 6,067 ft. and casing was cemented for a production test, after an electrical survey showed favorable indications in a sand section at 5,336-80 ft.

In the West Tuleta area, Bee County, location for a Teritary Wilcox test was made by Mills Bennett Production Co. and Anderson-Prichard Oil Corp. The location is on the Robinson lease in Section 6 of the Jose Maria Uranga grant, about 2,500 ft. northwest of the discovery well.

Along the Balcones Fault Line district, two wildcats in Caldwell and Medina counties were holding attention. In Caldwell County Dr. J. F. Atha's No. 1 G. W. Carter, Gideon Pace Survey, cored serpentine sand showing oil at 1,668-94 ft. and Dale lime showing oil at 1,750-93 ft., total depth. Seven-inch casing was cemented at 1,744 ft. and the well is swabbing wash water with a slight show of oil.

In Medina County and 7 miles southwest of Dunlay, Ellstone Oil Co. No. 1 Mann, J. Campbell Survey No. 24 cored sand with an oil showing at 893-903 ft., total depth, and 7-in. casing is being cemented for a production test.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Calhoun-Victoria Counties

Heyser field: Blanco Oil Co. and others' No. 13 Dunwoody, perforated casing 5,491-94 ft., 64 bbl. oil, 42 bbl. salt water, 5/32-in. choke. Gulf Oil Corp.'s No. 24-B Traylor, sand 5,478-92 ft., 126 bbl., 9/64-in choke.

Duval County

Longhorn field: M. M. Miller & Son's No. 13 fee, perforated casing 4,040-60 ft., 124 bbl., jetting. Piedra De Lumbre field: Magnolia Petroleum Co.'s No. 36 Duval County Ranch Co., sand 2,148-56 ft., 89 bbl. oil, 81 bbl. salt water. Magnolia Petroleum Co.'s No. 37 Duval County Ranch Co., 2,164 ft., 75 bbl., ⅛-in. choke.

Guadalupe County

Darst Creek field: Humble Oil & Refining Co.'s No. 26-A Denman, sand 2,605-10 ft., 150 bbl., pumping.

Jim Hogg-Brooks Counties

Kelsey field: Humble Oil & Refining Co.'s No. 25 McGill, 4,737 ft., 98 bbl., 7/64-in. choke. Colorado field: K. D. Harrison's No. 3-A Martinez, sand 3,054-62½ ft., 137 bbl., ¼-in. choke.

Jim Wells County

Ben Bolt field: Bridwell Oil Co.'s No. 2 Smith, perforated casing 5,230-36 ft., 184 bbl., ¼-in. choke. Reynolds field: Texas Gulf Production Co.'s No. 5-A Miller, perforated casing 5,148-52 ft., 314 bbl., ⅛-in. choke.

Live Oak County

Oakville field: Simmons Oil Co.'s No. 10-B McGriff, perforated casing 1,444-54 ft., gas well.

Medina County

Ina field: Medina Production Co.'s No. 7-M Schmidt, 948 ft., 40 bbl., pumping.

Nueces County

Agua Dulce field: Union Producing Co.'s No. 2 Anderson, 4,830 ft., gas well. Richard King field: Southern Minerals Corp.'s No. 5-A King, 6,148 ft., dry and abandoned.

Webb County

Adami field: Glenda Oil Co.'s No. 2 Adami, sand 983-88½ ft., 60 bbl., pumping.

Kentucky Fields

(Continued from Page 63)

and abandoned at 956 ft. Maxwell district: J. C. Miller, trustee's No. 5 J. F. Smith, 10-bbl. well in Jett sand, total depth 824 ft. No. 6 is a location.

Todd County, Elkton district: Eubanks and others' No. 1 B. N. Scott, moving in.

Union County, Boxville district: E. S. Benight's No 1 Jones, a location.

EASTERN KENTUCKY

ASHLAND, Ky., Oct. 2.—Five oil-well completions are included in this week's report of activities in the eastern Kentucky field.

Evans Oil & Gas Co.'s No. 5 Townsend on South Fork in the South Fork district of Powell County reached a total depth of 800 ft. and is producing 15 bbl. of oil daily. The same company completed No. 6 William D. Rogers, on Millers Creek in the same district, at 840 ft. and has a 20-bbl. well.

The Lowery heirs' No. 6 Joe T. Brown, trustee, on Millers Creek in Powell County, had an initial production of 5 bbl., at a total depth of 850 ft.

Monroe Faulkine's No. 1 L. T. Rogers on South Fork, in the district of that name in Powell County, total depth 800 ft., started at 10 bbl. of oil per day.

J. P. Perry's No. 1 A. Stamper, on Miller's Creek, made an initial production of 15 bbl. of oil at a total depth of 850 ft.

LEADERS IN GAS RECYC L

400 H.P. CLARK "Angle" used for gas Recycling and Refrigeration load,—gas cylinders discharge pressure 1,800 lbs.,—ammonia cylinders handling 100 tons refrigeration—Tidewater Seaboard Cayuga Plant, near Palestine, Texas.

CLARK 6-cylinder, 600 H.P. "Angle" Compressor in Recycling service for the Portex Oil Company, near Joaquin, Shelby County, Texas.

400 H.P. CLARK "Angle" Compressor designed for 1,700 lbs. discharge pressure,—Continental-Phillips-Shell-Tidewater Unitization Plant, Billings Field, Oklahoma.

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For gas recycling and repressuring service in the Midcontinent and Gulf Coast distillate fields, CLARK "Angle" Compressors have been almost the universal choice of operators, to date. Note the "Angle" installations for recycling service shown on these pages, which are a few of the CLARK "Angle" installations that have been made for this purpose.

There must be reasons for this leadership. We believe the basic explanation to be the savings which CLARK "Angles" have introduced. These savings are: (1) Shipment assembled; (2)

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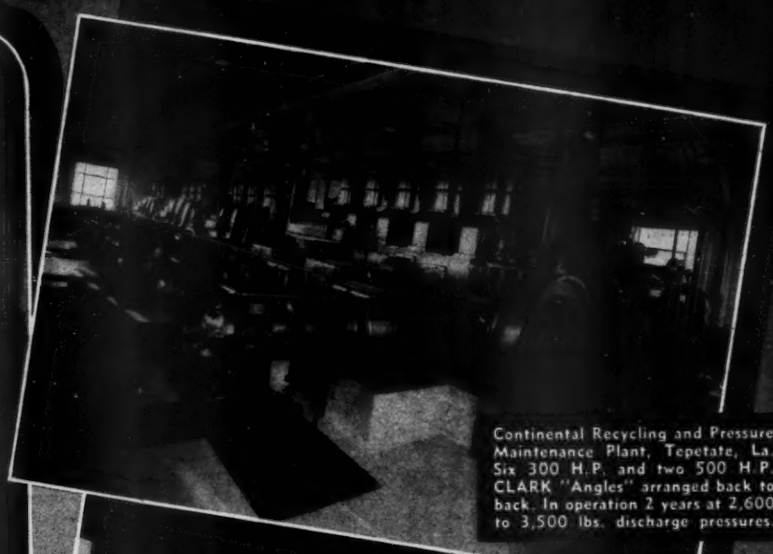
LING and REPRESSURING

2,400 H. P. CLARK "Angle" Compressor Battery—Four 6-cylinder, 600 H.P. units arranged back to back, at new Recycling Plant of the Corpus Christi Corporation, near Corpus Christi, Texas. This battery is handling 55,000,000 cu. ft. of gas daily at 3,000 lbs. discharge pressure.



Continental Recycling and Pressure Maintenance Plant, Tepetate, La. Six 300 H.P. and two 500 H.P. CLARK "Angles" arranged back to back. In operation 2 years at 2,600 to 3,500 lbs. discharge pressures.

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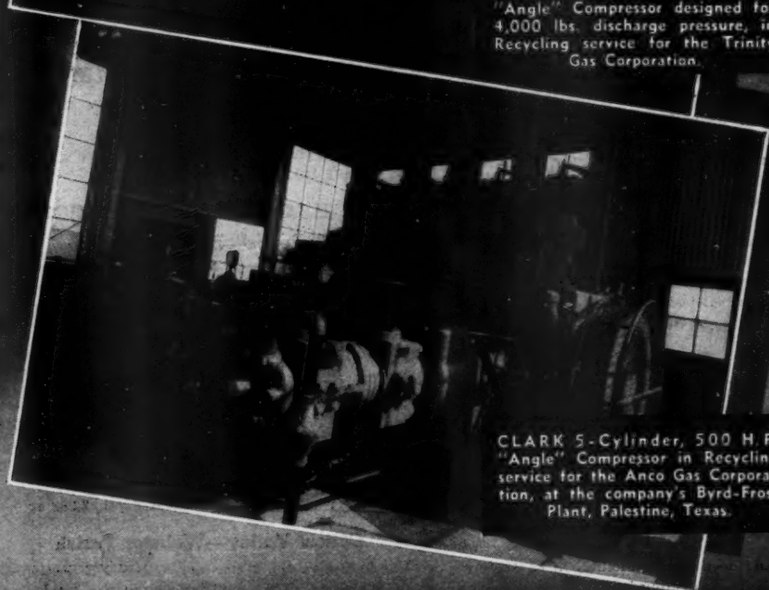

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ARK

North Louisiana, Arkansas

By GEORGE WEBER

Two Wells Drilling and One Starting in Yazoo City Area

SHREVEPORT, La., Oct. 2.—Deep tests continued to hold the center of attention in the tristate area this week, with shows of oil or gas in three such wildcats. New drilling in the Dorcheat field, in Columbia County, named last week by the Arkansas Oil & Gas Commission, indicated that area, formerly known as Experiment, may become the state's new drilling center. Another new field, Yazoo City, of Yazoo County, Mississippi, is under active drilling, with two tests approaching the sand in north and south outpost positions, and a third beginning this week is in a ½-mile northeast location.

Elm Grove Deep Test

Gulf Refining Co.'s No. 20 Hodges, a deep exploratory test in the old shallow Elm Grove field of Bossier Parish, tested gas, salt water and a show of heavy oil, following a threatened blowout in the lower Glen Rose lime topped at 4,411 ft. After shutting in and conditioning the mud, operators made a drill-stem test at 4,400-25 ft. and recovered 4,000,000 cu. ft. of gas, a spray of salt water and a show of heavy oil in 20 minutes. Top and bottom ¾-in. chokes were used. At the end of the week operators were cementing off salt water at a total depth of 4,450 ft. before drilling ahead to test deeper formations.

Another deep test came into prominence in the past but showed no results. The Union Producing Co.'s No. 1-A Tensas-Delta, located on the north flank of the Munroe gas field, was reported to have either a sand or lime at 7,269-76 ft. showing oil or gas. A drill-stem test made Friday, after two failures, is reported to have shown 16½ stands of salt water in 20 minutes. Little information is being released on the test, and neither the reported show nor the salt-water recovery can be fully credited. The well is scheduled to drill to the Smackover lime, possibly to a depth of 9,000 ft.

Lisbon Test

In the Lisbon field, Claiborne Parish, Lisbon Exploration Co.'s No. 1 Vaughn is drilling extremely hard formation, and was in hard sand at 7,737 ft. at latest reports. This well has had several gas showings and is running high with reference to other deep Claiborne Parish wells. Drilling progress is very slow.

Cotton Valley

Cotton Valley gained two Holloway-sand oil wells and an oil well in the "D" sand of the lower Marine, or Cotton Valley, formation. Hunt Oil Co.'s No. 2 Stewart, a southwest outpost, extended production in the "D" sand, making 37 bbl. hourly through a ⅜-in. choke with perforations at 8,475-95 ft. Another Cotton Valley test attracted attention in exploring the deep sands. Hunt Oil Co.'s No. 1 Glass and others, a southeast-edge test, showed oil in the "D" sand at 8,469-83 ft.; oil in the bottom 8 ft. of the Bodcaw section, cored at 8,562-8,602 ft., and gas in the Davis sand, cored at 8,853-59 ft. It was believed that the Davis sand might be oil productive, due to the flank location of the well, but after testing gas in the sand, operators are drilling ahead.

A Sabine Parish wildcat, Oklahoma Texas' No. 3 Frost Lumber Industries, this week followed a small show of oil at 2,029 ft. with a show of gas at 3,031 ft. The test was drilled to 3,041 ft. and shut in for further testing.

In western Caddo Parish Arkansas-Louisiana Gas Co. is rigging up No. 1 Bell, an eastern outpost to the deep gas-condensate production of the Waskom field in Harrison County, Texas, where the company has four wells.

The Pine Island deep test, Stanolind Oil & Gas Co.'s No. 131 Dilion heirs, is drilling below 8,450 ft. Geological information on the sections drilled below 7,618 ft. was released, with no showings reported. This well, drilled on the high point of the Pine Island structure, is believed by some geologists to have less chance of success than if it had been drilled downstructure. However, the lower Marine sands, corresponding to the "D," Bodcaw, Davis, etc., at Cotton Valley were found in the test, but they appeared tight and not productive of oil. There is a possibility of some gas production, but definite proof can only be had by testing the sands. It is expected that further tests will be drilled on the structure.

Arkansas Operations

The new Dorcheat field of Columbia County, Arkansas, is active with one offset well rigging up east of the discovery well, and others due to follow shortly.

Following a state-wide hearing in Magnolia last week, the Arkansas Oil & Gas Commission granted permission for the drilling of a third edge well in the Magnolia field, in Columbia County, on a 20-acre tract. Two other drilling tests in the field were found to be located about 200 ft. from the centers of their respective 40-acre tracts, and operators were ordered to shut down and await a hearing at which were discussed the questions of allocating the production, plugging and skidding over to the center to drill, or drilling directionally to the centers of the tracts. They elected the third choice.

In the Village field, McAlester Fuel Co.'s No. 1 E. D. Harris found a gas odor and a show of heavy oil in broken, silty sands cored at 6,267-79 ft. and 6,279-95 ft., and on a drill-stem test at 6,267-95 ft. recovered 35 ft. of mud and oil, 180 ft. of oil and 300 ft. of salt water in 18 minutes, with a working pressure of 13 lb. Operators are drilling ahead below 6,630 ft. to the regular field pay in the Smackover lime.

Mississippi Drilling

In the Yazoo City or Tinsley oil field of Yazoo County, Mississippi, the two Union Producing Co.'s tests, located north and south of the same company's discovery, will have 10-in. casing set at about 1,550 ft. A third active test is about to begin in the field. O'Brien Brothers and aothers' No. 1 Jennie Stevens, C SW NE Section 13-10n-3w, is rigging up on a mile-northeast location from the discovery. The Southern Natural Gas Co. is planning a well to the west of the discovery well, but no contract has yet been made.

EAST TEXAS BORDER COMPLETIONS

Caddo—Marion County

Joe G. Strahan No. 1 Stiles and others, M. G. Nall Survey, top of chalk at 1,450 ft., base of chalk at 1,950 ft., total depth 2,440 ft., dry and abandoned.

NORTH LOUISIANA COMPLETIONS

Bellevue—Bossier Parish

J. B. Stovall's No. 2 Gayoso, 50 ft. south, 350 ft. east of NW cor. SW SW Section 14-19-11, pumping 5 bbl., total depth 395 ft.

Caddo—Caddo Parish

C. C. Lowery's No. 2 Collins and others, 985 ft. east, 210 ft. north of C Section 7-20-15, flowing 30 bbl., total depth 1,563 ft., acidized with 3,000 gal. P. N. McCullough's No. 1 Hart, C NW SW SW Section 21-21-16, pumping 10 bbl. oil and 400 bbl. salt water, total depth 1,025 ft. Terrill & Horton No. 1 Smith, 200 ft. south and west of C Section 36-21-16, pumping 100 bbl. of fluid, 60 per cent salt water, total depth 2,289 ft.

Cotton Valley—Webster Parish

Hassie Hunt's No. 1 Gardner, C NW NE Section 32-21-10, flowing 25 bbl. of oil with input gas, total depth 5,894 ft. Hassie Hunt's No. 2 Gardner, 760 ft. south, 660 ft. west of NE cor. Section 22-21-10, flowing 197 bbl. through ⅝-in. choke, tubing pressure 125 lb., casing pressure 525 lb., 5½-in. casing 5,626 ft., broken Holloway sand at 5,636-5,745 ft., total depth 5,907 ft. Hunt Oil Co.'s No. 2 E. L. Stewart, C NE SW Section 32-21-10, 888 bbl. through ⅝-in. choke, tubing pressure 1,900 lb., casing pressure 2,600 lb., perforations at 8,475-95 ft., "D" sand, total depth 8,590 ft.

Munroe—Union Parish

Memphis Natural Gas Co.'s No. 2 Lankford, Section 12-11-3, 500,000 cu. ft. of gas daily, rock pressure 965 lb., total depth 2,198 ft.

Production by Pool

Estimated daily gross production all companies week ending September 29:

NORTH LOUISIANA

Bellevue	460
Caddo light	4,830
Caddo heavy	2,540
Converse	525
Cotton Valley light	*9,575
Cross Lake	4,230
De Soto and Red River	1,135
Elm Grove	305
Haynesville	2,775
Holly	90
Homer	2,790
Lisbon	5,590
Pleasant Hill	80
Rodessa	24,130
Sarepta-Carterville	†275
Sligo	1,265
Sugar Creek	265
Urania	2,550
Zwolle	2,765
Total	66,175

SOUTH ARKANSAS

Atlanta	490
Buckner	2,295
Champagnolle	1,510
Dorcheat‡	200
El Dorado	1,640
Lewisville	1,155
Lisbon	255
Magnolia	16,415
Miller County	260
Nevada	580
Rodessa	3,015
Schuler	17,880
Smackover	1,895
Smackover heavy	14,535
Stephens	515
Troy	1,200
Urbana	1,030
Village	1,000
Total	65,870

Texas side of Rodessa field, 27,080 bbl.
*2,365 bbl. is distillate.
†60 bbl. is distillate.
‡Formerly Experiment.

ARKANSAS COMPLETIONS

Magnolia—Columbia County

Marine Oil Co.'s No. 1 Jones, 660 ft. west, 740 ft. south of NE cor. NE NW Section 21-17-20, 1,235 bbl., ¼-in. choke, tubing pressure 1,200 lb., casing pressure 1,450 lb., total depth 7,650 ft. Standard Oil Co. of Louisiana's No. 1 Merritt and others unit, C SW SE Section 16-17-20, 576 bbl., 20/64-in. choke, casing pressure 1,400 lb., tubing pressure 1,325 lb., total depth 7,664 ft.

Lewisville-Stamps—Lafayette County

East Texas Refining Co. and others' No. 2 Buchanan, 330 ft. north, 660 ft. east SW cor. NE NW Section 19-16-23, 310 bbl. on gas lift, gravity of oil 43.4°, total depth 3,474 ft. East Texas Refining Co. and others' No. 1 George McGee, C N½ NE NE Section 23-16-24, 518 bbl. through open tubing and ⅝-in. choke, tubing pressure 250 lb., casing pressure 600 lb., total depth 4,002 ft.

Wildcat—Little River County

Harford Oil Corp.'s No. 1 Pinning, C NE NE SW Section 6-13-20, abandoned as dry at 1,915 ft.

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Rocky Mountain Area

By
T. R. INGRAM

Doubtful Location Proved Prolific in Leo Sand Test

DENVER, Colo., Oct. 2.—Colorado had one completion in the Stanolind Oil & Gas Co.'s No. 34-SD Parkinson, on the Iles dome, which made 60 bbl. per day, initially. It is an old well drilled deeper. Three new operations were reported in Huerfano County, and the Texas Co. and California Co. released a location for a third well on Wilson Creek.

Wyoming had one completion, Continental Oil Co.'s No. 10 Otto Rohiff, in Lance Creek, a well drilled in a doubtful location, but which produced 1,894 bbl. the first 24 hours from the Leo sand. One new operation was reported, a test on the Horne Valley structure, in Carbon County, by Martin & Gaylord.

Two average wells were completed in the Cut Bank field in Montana in the Texas Co.'s No. 4 Hardwick, and same company's No. 7 Section 9 Unit. The Huber-Montana Co.'s No. 3 Government, in North Cut Bank, made 10 bbl. an hour from the Moulton sand on a drill-stem test. Cut Bank had four new operations, two of them interesting wildcats or semiwildcats. Kevin-Sunburst had one new operation and no completions.

SOUTHEAST NEW MEXICO

For another week the activity in the Loco Hills pool of Eddy County centered the attention and had the majority of the development in the Southeast New Mexico district. Completions showed an increase during the week as three new oil wells and two dry holes were finaled in Eddy County and seven new wells completed in Lea County.

In the extreme west part of the Loco Hills pool, Me-Tex Oil Co.'s No. 1-B Ballard, NW NW Section 8-18s-29e, is cleaning out at a plugged-back depth of 2,635 ft. The test was reshot with 710 qt. from 2,550 to 2,635 ft. and operators believe commercial production is possible. The well was previously estimated at 30 bbl. daily. It is one location south of the two extreme-west producers in the field.

Apparent failure was seen for a ¾-mile-east outpost to the Loco Hills pool when Franklin Petroleum Corp.'s No. 1 Coppedge, NW SW NW Section 5-18s-30e, was shut down for orders at 3,092 ft. Another important and closely watched test got its first oil showings during the week past. It is L. E. Elliott's No. 1 Elliott, SE SE SE Section 24-18s-29e. The test is drilling at 3,254 ft. after finding a showing at 3,235 ft. which netted 1 bbl. of oil in 9 hours of swabbing.

On the extreme northern edge of the Loco Hills pool Allen, Pope & Fair's No. 4-A State, SE SW NW Section 36-17s-29e, pumped 75 bbl. of oil each 8 hours for a period of 4 days and did not pump off. The well is bottomed at 3,252 ft. and has been treated with 3,000 gal. of acid.

Possible failure was seen for a southeast outpost to the Lovington pool of Lea County when Coastal Development Co.'s No. 1 Caylor, NW NW SE Section 6-17s-37e, flowed 20 bbl. of water plus a slight scum of oil in 4 hours on gas lift. The test was plugged back to 4,785 ft. from an old total depth of 5,005 ft. The crew is expected to plug back farther for testing in a shallower sand.

Eddy County

Carper Drlg. Co.'s No. 4 Robinson, SE SE SW Sec. 25-16-31. T.D. 4,025 ft.; S.&F. est. 20 B.O.P.D.; reshot with 150 qt. and est. 25 B.O.P.D.
G. R. Burke's No. 1 State, NE NE NW Sec. 36-16-24. S.D.O. 1,421 ft.
B. H. Nolem's No. 1 Iles, SE SE SE Sec. 17-16-29. Skidded 15 ft. west, spd. new hole; drlg. 1,330 ft.
Allen, Fair & Pope's No. 4-A State, SE SW NW Sec. 36-17-29. T.D. 3,252 ft.; pay 3,200-11 ft.; C.O. 3,252 ft.; swbg. 75 B.O.P.D.; pump 75 B.O. in 8 hrs. for period of 4 days.
Artesia Drlg. Co.'s No. 1 Hoffman, SE SE SE Sec. 14-17-24. S.D.R. 423 ft.
J. R. Cones et al's No. 1 Saunders, SE SE NW Sec. 13-17-27. S.O. 505 ft.; S.D.O. 600 ft.
Danciger O. & R. Co.'s No. 5-A Turner, C N½ NW NW Sec. 19-17-31. Drlg. 3,430 ft.; S.O.&G. 3,408-15 ft.
R. W. Fair's No. 1-B State, SE NW SW Sec. 36-17-29. S.D.O. 3,318 ft.; 10 ballers sul. wtr. per hr., 3,315 ft.
Grayburg Oil Co.'s No. 1 State, NE SW SW Sec. 36-17-29. Oil sd 2,740-72 ft.; C.O. after shot.; est. 350 B.O.P.D.
J. E. Hughes' No. 3 Brooks, NE NW NW Sec. 19-17-28. S.D.O. 2,222 ft.
Plains Prod.'s No. 1 Daugherty, SE SE SE Sec. 11-17-27. T.D. 428 ft.; S.D.O.
Republic Prod.'s No. 3-B Robison, SE SE SE Sec. 35-17-29. S.S.O. 3,165 ft.; shot with 40 qt.; est. 4 B.O. P.D.; S.D.O. 3,302 ft.
Shallow Rock Oil Co.'s No. 3 Hastie, NW SW SW Sec. 18-17-28. S.D. 566 ft.
Brainard & Guy's No. 1 Guy, NW SW NW Sec. 10-18-29. T.D. 2,595 ft.; F. 50 B.O.P.D.; testg. 2,595 ft.
Plains Prod. Co.'s No. 1 Massie, C SW SW Sec. 27-18-29. S.D.R. 1,825 ft.
Barney Cockburn's No. 1 Graham-State, C NE NE Sec. 16-18-31. Drlg.
G. M. Cone's No. 1 Langford, C NW SW Sec. 9-18-29. T. D. 2,725 ft.; P.B. 2,475 ft.; est. 40 B.O.P.D.; tstg.
Continental et al's No. 1 Travis, SE SE SE Sec. 3-18-29. P.B. 2,670 ft.; pump 65 B.F. in 12 hrs.; ⅓ oil, ⅔ b.s. and w.
L. E. Elliott's No. 1 Elliott, SE SE SE Sec. 24-18-29. Drlg. 3,254 ft.; S.S.O. 3,235 ft.
Franklin Pet. Corp.'s No. 1 Masteller, NW NW NE Sec. 7-18-30. Loc.
Farmer & Tallmadge's No. 1 Hubbell, NE SW Sec. 4-18-25. Plug and abd. at 1,056 ft.
Franklin Pet. Corp.'s No. 1 Cappedge, NW SW NW Sec. 5-18-30. S.D.O. 3,092 ft.
E. S. McAuliff's No. 1 Coates, C SE NE Sec. 3-18-23. S.D.R. 1,002 ft.
Me-Tex et al's No. 1-B Ballard, C NW NW Sec. 8-18-29. T.D. 3,017 ft.; P.B. 2,635 ft.; est. 30 B.O.P.D. while C.O.
Saunders Bros.' No. 1 Travis, Sec. 17-18-29. P.B. 2,578 ft.; comp., 5 B.O.P.H., 2,502-2,603 ft.
Saunders Bros.' No. 1 Murdock, NW NW SW Sec. 4-18-29. T.D. 2,625 ft.; F. est. 100 B.O.P.D.; flwd. 26 B.O. in 40 min. then went dead.
Fred Turner's No. 1 Nickson, C NE NE Sec. 30-18-26. S.D.O. 2,150 ft.
Underwood & Sanders' No. 2 Miller, SW NW NW Sec. 4-18-29. T.D. 2,405 ft.; milling csg. 1,800 ft.; jnkd. hole; skidded 50 ft. east; drlg. 1,175 ft.
Underwood & Sanders' No. 3 Miller, SE SW NW Sec. 4-18-29. P.B. 2,660 ft.; comp.; 90 B.O.P.D.; after shot.
J. W. Elliott's No. 1 Cannon (O.W.D.D.), C SW SE Sec. 4-19-30. S.D. 2,355 ft.
Trojan Oil Co.'s No. 1 Grant, SW SW¼NE Sec. 33-20s-25e. S.O. 1,530 ft.; W.O. csg. 1,530 ft.

Chaves County

G. H. Cowden's No. 1 Brunson, 330 ft. N and W lines. Sec. 27-9s-30e. Drlg. wtr. well.
R. M. Baker's No. 1 Baker, NW NW NW Sec. 10-19-30. R.U. and S.D.
Caudill & French's No. 1-A Smith (O.W.D.D.), Sec. 1 4-29. Prep. to cmt. off csg. from 3,336-70 ft. Drlg. by csg. 3,315 ft.
E. J. Fisher's No. 1 Hill, CSL 8½ Sec. 8-15-25. Rng. 7-in. 850 ft.
Nay Hightower's No. 1 Billingslea, C SW NE Sec. 28-11-30. T.D. 3,445 ft.; P.B. 3,430 ft.; S.D.O.
Tarkenton Bros.' No. 1 Peters, SE SE NW Sec. 33-11-25. Drlg. 1,290 ft.
Western Minerals, Inc.'s No. 1 Dow, C SW NW Sec. 27-10-30. S.O. 3,920-25 ft.; S.D.R. 4,000 ft.

Dona Ana County

Picacho O. & G. Co.'s No. 1 Armstrong, Sec. 15-23s-1w. S.D. 2,410 ft., T.D.; repairs.
Slack & Mahres' No. 1 Simmons, Sec. 35-22s-5e. S.D. 2,785 ft., T.D.; repairs.

Luna County

O. D. Berry's No. 1 Berry, SE SE SW Sec. 33-22s-10w. S.D.O. 1,000 ft.

Lea County

Coastal Development's No. 1 Caylor, NW NW SE Sec. 6-17-37. T.D. 5,005 ft.; reran 2-in. tbg. to 4,784 ft.; ran 1-in. tbg. inside of 2-in. to 3,339 ft., with 5 flow valves; flwd. 20 B.O. wtr. plus S.S.O. in 4 hrs. by gas-lift.
Paul Love's No. 3 Pearsall, C NW NW Sec. 33-17-32. P.B. 3,915 ft.; flwd. 55 B.O.P.D.
Maljamar O. & G. Co.'s No. 2 Mitchell, SW SE SW Sec. 5-17-32. T.D. 4,498 ft.; P.B. 3,862 ft.; S.I.; P.B. depth 4,003 ft.
Ohio Oil Co.'s No. 1 State-Stapiin, C SE NW Sec. 10-17-35. Drlg. 4,640 ft.
Continental Oil Co.'s No. 8 Britt B-15, C W½ NW SE Sec. 15-20-37. Tstg. 3,882 ft.; 73 B.O. in 7 hrs. after acd.
Wilson Oil Co.'s No. 1 Shell-State, C NE SW Sec. 7-21-35. T.D. 3,736 ft.; flwd. 51 B.O.P.D.
J. C. Clower's No. 3 Christmas, SE SE NE Sec. 28-22-37. Comp., 300 B.O.P.D., 3,530-3,600 ft.
Peters & Elder's No. 3 Brunson, SW SW SW Sec. 3-22-37. Flwd. 42 B.O. in 7 hrs.; T.D. 3,742 ft.
Lem Peters' No. 2 T. O. May, SW SW NE Sec. 34-22-37. S.I. 3,655 ft.; comp.; 124 bbl. in 12 hrs. at 3,570-3,655 ft.
Skelly Oil Co.'s No. 1 Sherrell, C SW SW Sec. 31-24-37. Drlg. 1,025 ft.
Anderson-Prichard Oil Corp.'s No. 9 Wells, C SW NE Sec. 6-25-37. P.B. 3,530 ft.; 20 bbl. in 24 hrs. with 25% wtr. on gas lift.
Continental Oil Co.'s No. 1 State A-2, C SW SE Sec. 2-25-37. T.D. 3,500 ft.; P.B. 3,480 ft.; tstd. 1,140,000 cu. ft. gas; no oil; comp., 3,420,000 cu. ft. gas daily.
Hershback Drlg. Co.'s No. 1 Woolworth, NE NE SW Sec. 8-25-37. Abd. loc.

SOUTHEAST NEW MEXICO COMPLETIONS

Eddy County

H. M. Bowers' No. 1 Bowers-State, Section 1-18s-29e, abandoned location.

Farmer & Tallmadge's No. 1 Hubel, Section 3-18s-25e, plugged and abandoned at a total depth of 1,056 ft.

Franklin Petroleum Corp.'s No. 3-B Ballard, Section 7-18s-29e, flowed 30 bbl. of oil per hour through open 2-in. tubing after 70-quart shot from 2,736 to 2,766 ft.

Sanders Brothers' No. 1 Travis, Section 17-18s-29e, flowed 5 bbl. hourly from 2,502 to 2,603 ft.

Stanolind Oil & Gas Co.'s No. 1 Zorichak, Section 7-20s-31e, dry and abandoned at 2,515 ft.

Underwood & Saunders' No. 1-O Guy, Section 9-18s-29e, flowed 25 bbl. hourly through open tubing after a shot from 2,487 to 2,537 ft.

Lea County

Amerada Petroleum Corp.'s No. 3-LA State made 478 bbl. daily after a two-stage acid treatment from 4,622 to 4,903 ft. Flow was through 42/64-in. choke.

J. C. Clower's No. 3 Christmas, Section 28-22s-37e, made 300 bbl. daily flowing through open tubing after a 640-qt. shot from 3,530 to 3,600 ft.

Continental Oil Co.'s No. 1-A-2 State, Section 2-25s-37e, was completed for 3,420,00 cu ft. gas daily through ¾-in. choke after both acid treatment and shot in the pay section from 3,624 to 3,465 ft.

Culbertson & Irwin's No. 1 Lee Carter, Section 25-23s-36e, completed for 54 bbl. daily, flowing through open tubing, pay section being from 3,520 to 3,641 ft.

Magnolia Petroleum Co.'s No. 2-Q State, Section 36-16s-36e, completed for 112 bbl. daily, pumping, from a pay section from 4,900 to 5,100 ft.

Republic Production Co.'s No. 3 State, Section 32-17s-35e, flowed 30 bbl. hourly through ¾-in. choke from pay section from 4,330 to 4,591 ft.

Skelly Oil Co.'s No. 3 Hill, Section 6-21s-37e, made 217 bbl. daily through 20/64-in. choke, pay section being from 3,644 to 3,730 ft.

Texas-Pacific Coal & Oil Co.'s No. 8-A State, Section 21-23s-36e, abandoned location.

NORTHWEST NEW MEXICO

San Juan County

The Continental Oil Co.'s No. 12 Table Mesa, the first well drilled in the Table Mesa pool in 10 years, had the Dakota sand at 1,348-51 ft. and made 3 Mbl. per day with considerable water. It is a completion.

Angel Peak Oil Co.'s No. 8 Govt., C NW SW Sec. 13-28n-11w. T.D. 1,420 ft.; R.U. new rig.
Continental Oil Co.'s No. 100 Rattlesnake, NE NW NE Sec. 2-29n-19w. T.D. 3,106 ft.; cmtd. off wtr. sd. at 2,712-70 ft.; W.O.C.

COLORADO

Boulder County

Continental Oil Co.'s No. 1 Borra, SE NE SW Sec. 5-1s-69w. Drlg. gr. sh. 4,720 ft.

El Paso County

F. F. Hintze et al's No. 1 State, CEL SE SE Sec. 16-11s-66w. R.U.C.T.; will go to Hygiene at 4,000 ft.

Huerfano County

A report that has not been verified states that J. W. Tomkins & Son's No. 2 George, in the La Veta district, is standing with 1,190 ft. of oil in the hole at a total depth of 1,193 ft. Previous reports stated that it had 50 ft. of black oil in the hole at 1,100-05 ft. Next report was that it was shut down at 1,193 ft. waiting for shooter. Whether it was subsequently shot is not stated.

S. F. Obrecht's No. 1 Ritter, NE NW Sec. 13-29s-68w. Drlg. 250 ft.; (first report).
E. E. Reynolds' No. 2 Mestas, SW SW Sec. 2-29s-68w. Drlg. 250 ft.; (first report).
E. E. Reynolds' No. 1 State, NW SE Sec. 16-29s-68w. Drlg. 300 ft.; (first report).
S. W. Pressey's No. 4 Campbell, NW cor. Sec. 11-29s-69w. S.D. 550 ft.
J. W. Tomkins & Son's No 2 George, SE SE SE Sec. 3-29s-69w. S.D. 1,193 ft.; W.O. shooter.
E. J. Dunigan's No. 1 Campbell, SW NW Sec. 3-29s-69w. S.D.O. 1,300 ft.
Ira E. Miller's No. 1 Hamilton, SE SE NW Sec. 20-29s-67w. T.D. 1,365 ft.; T.A.

Jackson County

W. N. W. Corp.'s No. 1 North Park Coal Co., NW NW Sec. 18-9n-78w. T.D. 4,147 ft.; pulled 8¼-in. to replace shoe; rerng.

Larimer County

Continental Oil Co.'s No. 1 Meyer, SW SE SW Sec. 19-8n-68w. T.D. 5,206 ft.; P.B. to 4,686 ft.; R.U. to swb.

Moffat County

Stanolind Oil & Gas Co.'s No. 34-SD Parkinson, SW SE SW Section 22-4n-92w, Iles field, was recompleted at 3,317 ft. in the Sundance sand after plugging back from 3,381 ft., for 60 bbl. per day. It is an old well deepened from 3,296 ft.

Park County

South Park Oil Co.'s No. 1 Lemar, NE NE SE Sec. 34-11s-75w. Drlg. 7,046 ft.

Rio Blanco County

Texas Co.'s No. 2 Unit, on Wilson Creek, joint with the California Co., which extends the proven area a mile to the northwest of the discovery well, is still testing, and official figures have not yet been released. Location has been made for No. 3 Unit in the NE cor. Section 27, 1¼ miles north and a little west of the discovery, and a mile northeast of No. 2 Unit. It forms the north point of a triangle represented by the three wells and is around 100 ft. lower on structure than the other two as shown by the U. S. Geological Survey map of the structure.

Texas Co.-California Co.'s No. 3 Unit, NE NE NE Sec. 27-3n-94w. Loc.; (first report).
Texas Co.-California Co.'s No. 2 Unit, NW SE SW Sec. 27-3n-94w. T.D. 6,702 ft.; tstg.

WYOMING

Carbon County

Another test of the Horne Valley structure has been started in Martin & Gaylord's No. 1 Horne Brothers, which is drilling at 900 ft. and is reported to have shown 5,000,000 cu. ft. of gas in the top of the Muddy at 750 ft. after cementing the 8¼-in. on top of the sand. Location is one-third of a mile southeast of C. D. Cunningham's No. 1 Union Pacific-Horne, which was drilled to the Sundance in 1938 and had water in that horizon at 1,696-1,719 ft. The Cunningham well had a show of gas in the top of the Wall Creek at 318-58 ft.

Martin & Gaylord's No. 1 Horne Bros., CNL NW SW Sec. 22-22n-78w. Drlg. 900 ft.; T. Wall Ck. 138 ft.
Sinclair-Wyoming Oil Co.'s No. 12-B Wertz, SE NW NW Sec. 7-26n-89w. Drlg. 6,069 ft.
Ohio Oil Co.'s No. 1 University, SW SW SW Sec. 26-20n-78w. Drlg. 2,518 ft.
Albert Dev. Synd.'s No. 1 Boeke, SW NW Sec. 18-25n-79w. T.D. 250 ft.; good S.G. at 247-50 ft.
Producers Oil Co.'s No. 1 Lake Valley, CNL Sec. 14-20n-88w. Drlg. sdy. sh. 3,380 ft.

Natrona County

Continental Oil Co.'s No. 1 McGrath, C NW SW Sec. 15-34n-78w. Drlg. sh. and Bentonite 4,630 ft.
Connelly Drlg. Co.'s No. 1 State, SW SW NW Sec. 36-36n-81w. Drlg. below 1,300 ft.
Summit Oil Co.'s No. 2 Govt., NW NE NE Sec. 21-33n-80w. Drlg. 940 ft.

Niobrara County

The Continental Oil Co. has a good completion on the northwest flank of the Lance Creek field in its No. 10 Otto Rohlff, SW SW SE Section 31-36n-65w, which flowed 1,894 bbl. the first 24 hours from the Leo sand at 5,373-5,449 ft., total depth, through a ¾-in. choke on the 2½-in. tubing. It is an outside well and a west offset to No. 8 Rohlff. The location was considered doubtful, but it proved to be a better well than the one it offsets which made 672 bbl. initially after acidizing at 5,242 ft., total depth. It calls for an offset on the west by the Argo Oil Co. on the Ong tract.

A. B. Cobb's No. 4 Novick-Ong is still showing for only 6 bbl. an hour from the Joss sand. It was a failure in the Leo sand. If the Joss sand is classed as a separate producing horizon from the Leo, it may call for the organization of a new participating agreement in the unitized area. Some geologists express the opinion that it is a deeper member of the Leo, separated by a lime break. Most of the Leo-sand wells drilled in the field did not go deep enough to test the new horizon, and its extent is not known.

The Minnelusa Oil Corp. is going back in the MacKinnie Oil & Drilling Co.'s No. 1 Thompson, an edge well in the Sundance, which was completed in 1936 at 3,393 ft. for 800 bbl., and will deepen it to the Leo sand.

The Utah Oil Refining Co., which made a contract last July for 2,000 bbl. of oil daily from the unit, has been running that quantity to storage since July 1, building up stocks for the new pipe line to Salt Lake City which is expected to go into operation early in November.

The Illinois Pipe Line Co. has filed with the State Public Service Commission new tariffs reducing the rate from Lance Creek to Fort Laramie from 25 to 22 cents per barrel. Other reductions are from the Rock Creek field to Rock River, from 20 to 15 cents; from Dutton Creek to Rock River from 25 to 15 cents.

Minnelusa Oil Corp.-MacKinnie Oil & Drlg. Co.'s No. 1 Thompson, NE NW NE Sec. 7-35n-65w. T.D. 3,993 ft.; R.U.R. to D.D.; O.W.D.D.
Minnelusa Oil Corp.-MacKinnie Oil & Drlg. Co.'s No. 6 Thompson, NE NW SE Sec. 7-35n-65w. Drk.; M.I.R.
Continental Oil Co.'s No. 4 Apex-1, NW NE NE Sec. 34-36n-65w. Cmtd. 13-in. at 327 ft.
Continental Oil Co.'s No. 5 Apex-3, SE NE SW Sec. 34-36n-65w. Drlg. 1,925 ft.; 13⅜-in. cmtd. 323 ft.
Argo Oil Co.'s No. 11-B Elliott, NE NE SW Sec. 5-35n-65w. Drlg. 2,960 ft.
Continental Oil Co.'s No. 4-B Diehlman, SW SW NW Sec. 8-35n-65w. Drlg. 3,160 ft.
Ohio Oil Co.'s No. 13 Lamb-Acct. 1, NW SE NE Sec. 5-35n-65w. Drlg. 3,618 ft.
Continental Oil Co.'s No. 7 Rodeo-4, SW SW NE Sec. 35-36n-65w. T.D. 4,285 ft.; cmtd. 7-in. 4,243 ft.; W.O.C.
C. L. Price's No. 2 Lamb, SE NW NW Sec. 7-35n-65w. Drlg. 3,504 ft.
Argo Oil Co.'s No. 10-A Elliott, SE NW SE Sec. 5-35n-65w. Drlg. r.b. 4,720 ft.
Argo Oil Co.'s No. 7 Ford, NW SE NW Sec. 33-36n-65w. Drlg. 5,245 ft.
Fall River Roy. & Prod. Co.'s No. 1 Govt., CSL SE SE Sec. 35-40n-61w. Drlg. 2,390 ft.; S.G. 2,115-25 ft. and 2,255-60 ft.

Park County

Stanolind O. & G. Co.'s No. 2 Ohio, NW NW NE Sec. 3-47n-100w. T.D. 1,586 ft.; prep. to comp. as gas well.

Sublette County

California Co.'s No. 1 Unit 1, C SW NE Sec. 14-31n-109w. Drlg. 9,030 ft.

Sweetwater County

Sinclair-Wyoming Oil Co.'s No. 86-A, SE NE NE Sec. 10-26n-90w. Drlg. 1,812 ft.; T. Dak. 1,566 ft.; T. Mor. 1,695 ft.

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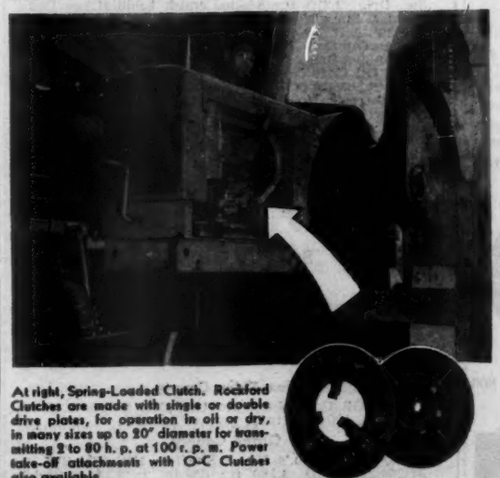

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Sinclair-Wyoming Oil Co.'s No. 1 Mosey, NW NW NW Sec. 18-18n-104w. T.D. 2,610 ft.; cmtd. 8⅝-in. at 2,606 ft.; prep. to test.
Wyoming-Calif. Pet. Co.'s No. 2 Govt., CWL NW SW Sec. 24-17n-104w. Drlg. 2,100 ft.

Weston County

Hunter & Satterlee's No. 1 Draper, NW NW NW Sec. 10-46n-63w. S.D. 160 ft. for repairs.
Kroker et al's No. 2, CNL NE NW Sec. 21-47n-63w. Drlg. below 400 ft.

MONTANA

Carbon County

V. W. Kirk's No. 1 Robinson, SW SW NW Sec. 2-7s-21e. Cg. 5,693 ft.

Glacier County

Cut Bank had two completions, one near completion, and four new operations.

Texas Co.'s No. 4 Hardwick, C NW SE Section 17-32n-5w, at the extreme southern end of the field, swabbed 52 bbl. the first 15 hours from the Cut Bank sand at 2,980-3,016 ft. It was then shot in the main pay at 3,008-16 ft. with 5, 10, and 20 qt., and is cleaning out.

Texas Co.'s No. 7 Section 9 Unit, C SW SW Section 9-32n-5w, swabbed 92 bbl first 24 hours before shooting from the Cut Bank sand at 2,947-82 ft. The main pay at 2,970-78 ft. was shot with 5, 10, and 15 qt., and is cleaning out.

Huber-Montana Co.'s No. 3 Government, C NW NW Section 24-37n-5w, in North Cut Bank, is a near completion. It cored saturated Moulton sand at 2,574-78 ft. and on a drill-stem test flowed at the rate of 10 bbl. per hour. The oil is about 37 gravity. After resetting packer, it flowed at the rate of 12 bbl. per hour. This is an important wildcat located ¼ mile west of the same company's No. 1 Hinstrager, a 43,000,000-cu. ft. gasser, and ⅛ mile north of No. 2 Hinstrager, the nearest oil well, which made 65 bbl. per day from the Sunburst sand.

Two of the new operations are specially interesting. Texas Co.'s No. 1 Ammerman is a northeast offset to the Glacier Production Co.'s No. 1 Larson, an outpost well which was completed last July and swabbed 165 bbl. the first 24 hours from the Sunburst sand, and ¾ mile west of Cobb-Pardee's No. 1 Stuft, in Section 25, which made 9,073,000 cu. ft. of gas in the Moulton sand.

The other interesting location is the A. B. Cobb-T. T. Co.'s No. 1 Bilstad, a wildcat 2¼ miles northwest of the Glacier Production Co.'s No. 1 McNamar Unit, in Section 15-36-5, a gas well, and 4 miles southwest of the Yukon Oil Co.'s No. 1 Lungren, the nearest oil well.

A. B. Cobb-T. T. Co.'s No. 1 Bilstad, C NW SE Sec. 4-36n-5w. M.I.R.; (first report).
Texas Co.'s No. 1 Ammerman, CWL SW SE Sec. 26-36n-6w. Loc.; (first report).
Glacier Prod. Co.'s No. 1 Stott, C SE NW Sec. 34-33n-5w. R.U.; (first report).
Texas Co.'s No. 2 Bonnet, C SW SE Sec. 8-32n-5w. Loc.; (first report).
Glacier Prod. Co.'s No. 2 Barrington, C NW NE Sec. 19-33n-5w. Spdg. 230 ft.
M. R. Wagner, Tr.'s No. 2 Tribal-173, NE SE SE Sec. 12-32n-6w. Drlg. 305 ft.
Huber-Montana's No. 3 Govt., C NW NW Sec. 24-37n-5w. T.D. 2,578 ft.; tstg.
Texas Co.'s No. 8 Morrison, CEL NW NE Sec. 22-35n-6w. Cmtd. 10¾-in. at 560 ft.; Colo. 535 ft.
A. B. Cobb & Co.-Texas Co.'s No. 1 Vasboe, CEL NW SW Sec. 27-37n-5w. T.D. 2,700 ft.; wtr. in Cut Bank sd. at 2,690 ft.; P.B. to 2,676 ft.; will shoot Sunburst sd. at 2,666-72 ft.
Glacier Prod. Co.'s No. 2 Hall, C NE SW Sec. 35-36n-6w. T.D. 2,590 ft.; C.O.

Meagher County

Dan Drumheller's No. 1 Moss Agate, SW SE NE Sec. 25-7n-7e. Drlg. 1,950 ft.

Pondera County

Pondera Oil Synd.'s No. 1 Haber, NE NW SE Sec. 17-27n-4w. T.D. 2,034 ft.; rng. 7-in. to 1,949 ft.; S.G. 2,020 ft.; T. Mad. 2,025 ft.; S.O.

Teton County

R. C. Tarrant's No. 1 Hoeschen, NE SE Sec. 34-27n-5w. T.D. 2,298 ft.; acd. third time; no impr.; S.D.

Toole County

A. Beardslee's No. 10 Swears, C SW NW Sec. 9-35n-2w. Drlg. 320 ft.; (first report).
Imperial-Craig's No. 1 Gauss, C SW NE Sec. 18-35n-1w. Drlg. 695 ft.
Montana-Dakota Utilities Co.'s No. 1 Krutsfield, C SE SW Sec. 1-33n-1w. Drlg. 1,325 ft.; Sunb. 1,295-1,325 ft.; 1,000 ft. W.I.H.
Frazer & Smith's No. 2 Van Note, NE SW NW Sec. 30-35n-2w. S.D. 940 ft.
Coolidge & Coolidge's No. 1 Maley, SW NE SE Sec. 31-36n-1w. S.D. 100 ft.
L. J. Yealy's No. 13 Shaw, NE SW SE Sec. 35-36n-2w. T.D. 1,509 ft.; T. Sunb.; cmtd. 6¼-in.
Italo Pet. Corp.'s No. 1 Cornett, C SW NW Sec. 30-37n-3w. Drlg. 2,225 ft.; 8⅝-in. cmtd. 1,966 ft.
Morton & Shaw's No. 1 Ellingson, NE NE NW Sec. 23-35n-3w. S.D. 400 ft.
G. & A. Oil Co.'s No. 14 Goeddertz, NE SE SW Sec. 23-35n-3w. Drlg. 1,676 ft.; cmtd. 7-in. 1,495 ft.
Le Mac Oil Co.'s No. 1, SW SE SW Sec. 3-34n-4w. T.D. 2,079 ft.; contact 2,079 ft.; S.O. and consid. wtr.
Art Crabtree's No. 1 Thompson, NE SE NW Sec. 35-35n-2w. T.D. 1,594 ft.; P.B. to 1,483 ft.; stdg.; not tstd.
Superior Pet. Co.'s No. 8-A Govt., CEL NW NE Sec. 12-35n-3w. Drlg. 1,720 ft.

Yellowstone County

Riverton Oil Co.'s No. 1 Fox, CEL NW NE Sec. 14-2n-23e. T.D. 1,975 ft.; U.R. 8¼-in. from 1,900 ft. to bttm.

SOUTH DAKOTA

Harding County

South Dakota State Roy. Co.'s No. 1 State, SW NW Sec. 35-18n-1e. Drlg. below 4,000 ft.

UTAH

Box Elder County

Northern Oil Co.'s No. 1 Govt., C NE SW Sec. 17-13n-4w. T.D. 400 ft.; cmtd. csg. at 240 ft.

Grand County

Cane Creek Oil Co.'s No. 2 Shaffer, NW SW SW Sec. 31-26s-21e. T.D. 3,180 ft.; 6⅝-in. at 3,135 ft.; drlg. plug.

Kansas Fields

(Continued from Page 73)

moving in material. In McPherson County, F. S. Williams' No. 2 Lewis, C S½ S½ SE Section 30-19-1w, was a cellar. In Marion County, Lariaux and others' No. 2 Forsberg, SW SE SW Section 21-17-4, was moving in material. In Cowley County, Arthur Brewer's No. 2 Curfman, NW NW SE Section 28-31-4, was a location. In Sumner County, Slocum & Elmeyer's No. 1 McLaughlin, NW cor. Section 10-35-2, was rigging rotary. In Woodson County, Oko Oil Co.'s No. 5 Hoagland, C S½ SE SE Section 35-23-14, was a location.

Missouri Operations

ST. JOSEPH, Mo., Oct. 2.—Although exploration by the drill in Forest City basin failed to find oil production in the first year since the big lease play began late in the summer of 1938, rentals are being paid and leases renewed for another year. Some companies are reported selecting leases on basis of geophysical surveys, paying rental renewals on them and letting other leases lapse. Most of the major companies are expected to retain the bulk of their leases. Some small operators, unable to start drilling by expiration time, are holding on to scattered leases and letting others go.

Morrow & Rogers and others' No. 1 Cooley, NW SE SE NW Section 33-64-17w, Adair County wildcat, northeastern Missouri, was reported to have had a showing of oil at 875-85 ft., in Hunton or Callaway lime. Operators may run casing and test. Mayson Oil Co.'s No. 1 McGonigle, CNL SE NW Section 20-63-13w, east of Kirksville in Adair County, plugged back from total depth of 1,341 ft. in Arbuckle lime, perforated at 1,156½-66 ft., acidized with 500 gal. and swabbed all water. It was to be plugged back and perforated higher up to test a showing.

McGinnis, Elwell and others' No. 1 Maple, NE SW SE Section 3-62-26w, Harrison County, had a fishing job at 1,851 ft. in Arbuckle lime, and was not looking very promising. Salt water was found in St. Peter sand. Operators were expected to drill about 100 ft. into Arbuckle.

Missouri Valley Gas & Oil Co.'s No. 1 Breen, SW NE Section 7-51-33w, Platte County, was completed for 750,000 cu. ft. of gas in Peru sand at 592-617 ft., total depth. Same operator's No. 1 Brown, SW NE SW Section 7-51-33w, had Peru sand at 542-54 ft., total depth, and produced 2,250,000 cu. ft. of gas. The No. 2 Brown, SW SE SW Section 7-51-33w, drilled to 100 ft. and was abandoned because it was running low. Rig was moved to Section 12-51-34w for a deep test. J. E. Linton No. 1 Chillicothe, CSL NE SE Section 15-56-23w, Livingston County, was an abandoned location.

Indiana Fields

(Continued from Page 63)

vieve lime at 1,492 ft., small show of oil and gas at 1,564 ft., sulfur water at 1,565 ft.; drilling ahead. Fred McWilliams' No. 1 Edwards, NE SE SE Section 24-5s-9w, shut down at 1,700 ft.

In Vanderburg County K. R. Bixby's No. 4 Glaser, SE cor. SW SW NW Section 31-5s-11w, tools on the ground.

In Pike County George W. Miller's No. 1 Nixon, SE SW NE Section 14-3s-8w, total depth 3,648 ft., underreaming casing.

In Gibson County Jack Brown and others were rigging up rotary tools for No. 1 Welborn, SE SE NW Section 27-2s-12w. Hulman and others' No. 1 Hollis, SE SW NW Section 36-2s-11w, location. Midwest Development Co.'s No. 3 Erdell, SE cor. SW SW Section 23-2s-9w, drilling at 750 ft. Same company's No. 2 Erdell had sand at 1,467-74 ft., and pumped 60 bbl. of oil in 7 hours but was not yet completed. Midwest was spudding No. 1 Bryant, SW NW NE Section 15-2s-9w.

In Daviess County Ruble's No. 1 Huff, NW SE NW Section 9-2n-5w, was fishing at 500 ft.

In Knox County T. J. Boyce's No. 1 Purcell, Donation 224, Township 2n-8w, below 3,000 ft., with no oil showing. A. C. Thomas' No. 1 Schwab, Lot 44, in Township 2n-10w, small showing of dead oil at 1,740-50 ft., drilling at 1,800 ft.

In Sullivan County Salem Oil Co.'s No. 1 Woodward, NW NW NW Section 7-8n-9w, drilling at 1,634 ft. Siosi's No. 1 Cushman, NE SE SE Section 18-8n-10w, lost first hole at 600 ft., spudding second hole at 200 ft., 10 ft. east of first hole.

In Clay County Dorsey Oil Co.'s No. 1 Hickman, NW SE SE Section 15-9n-6w, drilling below 400 ft.

In Vigo County Siosi's No. 1 Hilbrandt, C N½ NW NW Section 15-10n-10w, Devonian lime at 2,097 ft., drilling at 2,125 ft., with no showing.

In Henry County Knightstown Natural Gas Co.'s No.

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1 E. Cox and others, C NW SW Section 36-16n-07e, location for a Trenton-lime gas test.

In Owen County Young and Ellis' No. 1 Rice, NE NE NW Section 29-11n-3w, drilling at 500 ft.

In Marion County Jefferson and others' No. 1 Water Co., NE NE SW Section 15-16n-3e, drilling at 200 ft.

In Jay County D. Davis' No. 1 Perry, near C NW NE Section 17-24n-12e, drilling at 250 ft.

In Blackford County A. M. Jones' No. 1 Simonton, SW SE NE Section 15-24n-11e, Trenton lime at 994 ft., green shale 1,531-36 ft., drilling at 1,565 ft., in gray lime.

In Huntington County R. L. Myers' No. 1 Cramer, C SW NW Section 29-26n-9e, Trenton lime at 989 ft., drilling at 1,100 ft., with stains of oil in lime.

In St. Joseph County Nilson's No. 1 Kush, NE NE NE Section 8-37n-1e, drilling at 300 ft.

In LaGrange County, SW NE NE Section 13-37n-9e, salt water at 800 ft., rainbow of oil at 1,050 ft. in top of the Trenton; shut down.

In Gibson County Huddleston and others' No. 2 Jolly, SE SE NW Section 18-3s-13w, rig up for the second well on a 1-acre lease. Ray Ryan and others' No. 1 Skiles, SW cor. NW NE Section 18-3s-13w, show of oil at 2,565-71 ft., not tested, shut down for orders. Thomas Lacey and others' No. 5 Cooper, SE cor. SW SW SW Section 18-3s-13w, shot with 20 qt. at 2,075-85 ft., cleaning out. Lewis Production Co.'s No. 4 Cooper B, SE cor. NE¼ Section 12-3s-14w, shot with 30 qt. at 2,515-32 ft., hole full of oil, rigging up to pump. Papoose Oil Co.'s No. 1 Cooper B, NE SE SW Section 12-3s-14w, top of Glen Dean 2,256 ft., drilling at 2,297 ft. Fitzpatrick and others' No. 5 Cooper, NW NW NE Section 13-3s-14w, sand at 2,867-75 ft., set casing at 2,757 ft. and waiting for cement to set. Gwin Drilling Co. and others' No. 1 Julian, NE cor. SE¼ Section 26-3s-14w, shut down for orders at a total depth of 2,952 ft. It had not been tested. Lewis Production Co. was drilling at 850 ft. in No. 3 Cooper D, NE NE NW Section 13-3s-14w. J. E. Amis, Jr.'s No. 5 Cooper-Amis, C NW SW NE NE Section 24-13s-14w, drilling at 675 ft.

In Posey County Sun Oil Co.'s No. 4 Heil, SE SE SE Section 1-7s-12w, was shot with 40 qt. at 1,753-75 ft., but lost the sand pump in the hole, and the crew was fishing. H. G. Lewis and others' No. 1 Hill, NE NW SE Section 35-3s-14w, pumps 10 bbl. of oil and 10 bbl. of water at a total depth of 3,115 ft.; will acidize. C. W. McKeehen and others' No. 1 Keck, NW NW NW Section 35-5s-14w, cored lime and Cypress sand at 2,487-2,503 ft. and recovered 5 ft. of lime and 11 ft. of saturated sand; shut down to run casing. Superior Oil Co. set 10-in. casing at 167 ft. in No. 10 New Harmony, SW SE SW Section 10-5s-14w.

OHIO

NEWARK, Ohio, Oct. 2.—Eighteen completions were recorded in the Ohio fields covered by this report; seven gas wells, three oil wells, and eight dry holes. The Lima field accounts for one of the oil producers. A fair gas well was completed in the Newark pool, gaging better than 2,000,000 cu. ft. An Oriskany test in Morgan County is approaching the top of the Corniferous lime.

In Athens County, Ames Township, D. T. Orndoff's No. 2 J. B. Keirns, Section 29, made 70,000 cu. ft. of gas on open flow from the second Berea at 1,418-31 ft. Bern Township, Williams Brothers' No. 1 Harry Aldridge, Section 16, was dry at a total depth of 1,138 ft. Canaan Township, C. W. Nuzum's No. 2 G. E. Crawford, Section 8, has an open flow of 500,000 cu. ft. of gas from the Salt sand at 617-26 ft. Lodi Township, Townsend Gas Co.'s Sec. 23, was drilled deeper to the Maxburg 500-ft. sand for 1,700,000 cu. ft. of gas, open flow, at 590 ft.

In Cuyahoga County, Independence Township, Daugherty & Kime's No. 1 Kristina Hajek, Lot 21, Tract 2, was drilled through the Clinton sand to 3,067 ft., and is a dry hole.

In Guernsey County, Millwood Township, Purdy Production Co.'s No. 1 E. L. Spencer, Section 22, is a small gas well in the Berea, gaging 65,000 cu. ft. at 1,597-1,606 ft.

In Hocking County, Ward Township, Ohio Fuel Gas Co.'s No. 174 Sunday Creek Coal Co., Section 17, is a small gas well in the Keener sand at 425 ft.

In Licking County, Madison Township, Ohio Fuel Gas Co.'s No. 2 J. D. Jones, Lot 5, second quarter, is a Clinton-sand gas well good for 2,200,000 cu. ft. open flow from sand at 2,555-89 ft. Perry Township, Charles Eagon's No. 1 Samuel Wina, Section 4, was dry in the Berea, total depth 770 ft.

In Medina County, Chatham Township, Preston Oil Co.'s No. 34 B. B. Parent, Lot 5, Tract 16, is an oil well in the Berea, making 30 bbl. the first 24 hours after shot; sand at 238-315 ft. Edson & Son's No. 1 Aetna Life Insurance Co., Lot 6, Tract 15, found the Clinton sand dry; total depth 2,796 ft. York Township, J. H. Wilt's No. 1 Ed Burnham, Lot 2, was dry in the Berea at 483 ft.

In Meigs County, Letart Township, Roy Proffit and others' No. 1 Victoria Norris, Section 5, made 250,000 cu. ft. of gas from the second Cow Run sand at 725-33 ft.

In Muskingum County, Union Township, Atha Realty Co.'s No. 2 G. B. Gibson, Section 16, was dry and abandoned at 772 ft. Harrison Township, Gas Producing Co.'s No. 1 Lewis H. Luman, Section 7, was dry in the Clinton sand at 4,219-58 ft., but had oil in the Medina at 4,311-24 ft. It swabbed 12 bbl. of oil the first 24 hours after the shot.

In Noble County, Wayne Township, Yoker Valley Oil & Gas Co.'s No. 1 J. A. Eagon, Section 28, has an open flow of 700,000 cu. ft. of gas from the Berea at 1,500-06 ft. Jewell Production Co.'s No. 1 Muskingum Valley Conservancy District, Section 11, was dry in the Berea at 1,450 ft.

In Tucarawas County, Dover Township, Lyons Co.'s No. 1 Frederick Espenschied, Section 20, was drilled through the Clinton to 4,592 ft., and was dry and abandoned.

Lima Field

One oil completion is reported in the Trenton field, Crane Township, Wyandot County. Upper Sandusky Oil Gas Co.'s No. 8 Nellie Saltzman, Section 28, had the top of the Trenton at 1,311 ft. with a good oil showing 24 ft. in. It was shot with 100 qt. and is rated as a 10-bbl. pumper.

In Franklin County, Madison Township, Carl Blackstein's No. 1 E. J. Simms, Section 15, has resumed operations. Top of the Trenton was found at 2,280 ft.; drilling at 2,316 ft.

The test by C. M. Foraker on Charles Dearth in Meigsville Township, Morgan County, is approaching the top of the Corniferous lime which should be found between 3,500 and 3,600 ft.; now drilling at 3,428 ft.

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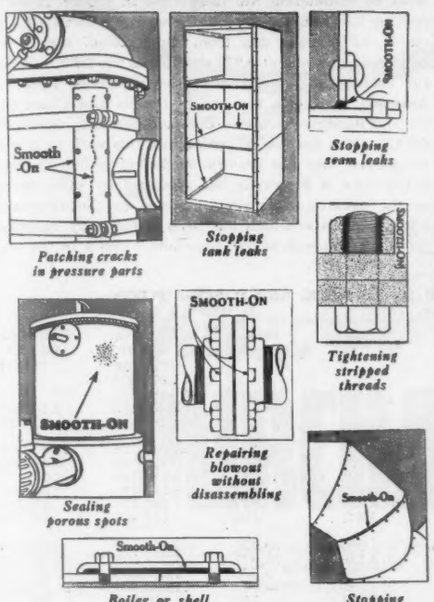

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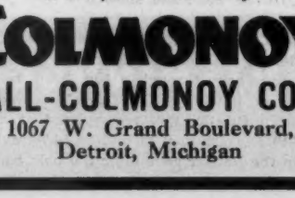

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California Field Report

By
L. P. STOCKMAN

Montebello Reaches Peak of Production and Development

LOS ANGELES, Calif., Oct 2.—The drilling peak in the Montebello field of Los Angeles Basin was reached during the last week in September, and from present indications the amount of drilling will begin its decline within the next week. No decided change will be manifested for another 2 weeks but completions have outnumbered new wells started during the past fortnight and this will be further evidenced early in October when a large part of wells now drilling below 6,500 ft. have been completed. The limits of production have not been defined in any direction, although contours on top of the La Merced zone indicate that operators are quite close to the edge of the field in the west, south and east.

A check of the Montebello field reveals that 17 wells are making hole below 7,000 ft., 6 wells are below 6,000 ft., 7 are below 5,000 ft., 9 below 4,000 ft., 2 below 3,000 ft. and 4 wells drilling above 3,000 ft. The status of wells below 7,000 ft. indicates that most of them should be finished within the next 10 days and those wells between 6,000 ft. and 7,000 ft. should be completed within 2 weeks. The maximum potential production peak was undoubtedly passed about 3 weeks ago but due to operation of an injunction which prohibits waste of natural gas actual production did not reveal this condition.

New Completions

Standard Oil Co. headed the completion list in the Montebello field last week by finishing Nos. 7 and 8 on the Braun lease, which the company acquired a number of years ago. The former was brought in flowing 430 bbl. of very clean 42.5-gravity oil and 6,300,000 cu. ft. of gas per day through a 32/64-in. bean under a tubing pressure of 1,750 lb. and a casing pressure of 1,900 lb. It was finished in the La Merced zone at 7,645 ft. No. 8 Braun was completed flowing 290 bbl. of clean 39.4-gravity oil and 1,000,000 cu. ft. of gas daily through open line from the La Merced zone at 7,660 ft.

Late in the week, East Montebello Oil Co. completed No. 2 Rissinger flowing 1,140 bbl. of clean 36.9-gravity oil and 2,050,000 cu. ft. of gas per day from the La Merced zone at 7,621 ft. No. 1 Bird of Pueblo Oil Co. has been completed flowing 1,360 bbl. of clean 36.5-gravity oil and 4,400,000 cu. ft. of gas per day from 7,657 ft. Union Oil Co. which is running four strings of tools in the Montebello field has completed derrick for No. 35 La Merced 300 ft. east of No. 31 La Merced, a producing well and close to the south property line of the La Merced lease.

Wilmington

Two new wells and one recompletion were put on production in the Wilmington field of Los Angeles Basin during the week. Long Beach Oil Development Co. completed two tideland wells when No. 11-X and No. 7-Z were brought in flowing from 3,873 ft. and 2,846 ft. respectively. The former was finished flowing 170 bbl. of 19.3-gravity oil from the upper Terminal zone and 330 bbl. of 27.2-gravity oil daily from the lower Terminal zone. Upper Terminal zone produced through a 12/64-in. bean back of a flow pressure of 370 lb. while the lower Terminal zone was produced through a 20/64-in. bean and showed a flow pressure of 640 lb.

No. 7-Z of Long Beach Oil Development Co. was completed flowing 426 bbl. of 18.6-gravity oil per day from the Ranger zone through a 1-in. bean, behind a flow pressure of 150 lb. No. 1 Thiele Community of Pacific Western Oil Co. was recompleted at a total depth of 2,849 ft., pumping 75 bbl. of 14.7-gravity oil per day from the Ranger zone after the hole had been cleaned out and scraped to permit the landing of gravel.

Brookline Oil Co., which is developing acreage held under lease from the Long Beach Harbor Commission, is making some fast footage and the last two wells have been finished in less than 2 weeks. In No. 4, now nearing completion, the company drilled 3,400 ft. of hole in a little over a week and should have this well ready for production in a few days. Long Beach Oil Development Co., operating for itself and the city of Long Beach as fee owner, is the largest operator in the Wilmington field at present with five strings of tools in operation followed by Union Pacific Railroad Co. with four incompleted drilling wells under way. Drilling operations have reached the settled stage as compared with conditions several months ago when competitive conditions existed. Hancock Oil Co. and Long Beach Oil Development Co. have a number of wells to be drilled before completing their present program, hence this field will remain relatively active for several months. Another drilling peak will be reached when operators open the door for exploitation of the Ford zone which to date has not been developed in the Long Beach Harbor section of the Wilmington field. The discovery well of General Petroleum Petroleum Corp. showed this zone to be highly productive although it is not likely to compare with the Terminal zone from a production standpoint. The Ford zone in the western end of the field in the town-lot area has failed to show large sustained production but this area is separated from the Long Beach Harbor section of the field where it is believed most of the oil in the Ford zone has been trapped.

Coalinga

Standard Oil Co. extended the productive limits of the Northeast Coalinga field about 2,000 ft. south this week by completing No. 73-19-B fee in Section 19-19-16 flowing 2,065 bbl. of clean 26.5-gravity oil and 1,440,000 cu. ft. of gas per day from the Gatchell zone with bottom of the hole at 8,270 ft. This is the fifth successful completion in the Northeast Coalinga field as Amerada Petroleum Co. has two wells and Union Oil Co. and Bandini Petroleum Co. have one each. Standard Oil Co. did a fine job in completing this well, as it will be noticed that the gravity of the oil is 26° as compared with a 50-gravity oil produced by other wells in the district. Attention is called to the relatively low gas-oil ratio which has been attained by blanking off the high-pressure gas zone lower down in the sec-

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	September 23		September 16			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	130,147	18,592	.....	.....	771,206	777,911
Fuel oil	66,575	9,511	.....	.....	1,679,023	.....
Diesel and gas oil	.....	.....	.....	.....	163,501	.....
Gasoline	189,087	27,012	.....	.....	2,621,213	2,437,678
Kerosene	.....	.....	.....	.....	194,850	257,005
Foreign exports—						
Crude oil	63,501	9,072	351,568	50,224	11,215,516	16,552,266
Fuel oil	304,961	43,566	46,995	6,714	6,591,049	6,581,083
Diesel and gas oil	233,048	33,293	91,160	13,023	5,617,494	4,658,810
Gasoline	174,640	24,949	10,617	1,517	5,567,749	5,815,696
Kerosene	.....	.....	6,842	977	1,295,701	825,046
Lubricants	37,624	5,375	3,571	510	127,367	173,388
Coastwise-domestic—						
Crude oil	116,237	16,605	271,085	38,726	9,379,128	8,986,286
Fuel oil	14,542	2,077	216,136	30,877	7,304,593	8,336,692
Diesel and gas oil	30,884	4,412	37,311	5,330	1,669,254	1,161,530
Gasoline	406,565	58,081	313,585	44,798	11,980,490	10,958,045
Kerosene	29,212	4,173	5,286	755	350,767	190,180

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	124,055	
Diesel and gas oil	.....	.....	.....	.....	69,550	196,644
Gasoline	.....	.....	.....	.....	.....	25,409
Kerosene	.....	.....	.....	.....	68,954	16,124
Asphalt	.....	.....	.....	.....	425,845	490,039
Lubricants	.....	.....	.....	.....	19,534	16,905
Foreign exports—						
Crude oil	164,238	23,463	81,171	11,596	4,050,123	4,420,521
Fuel oil	60,939	8,706	25,967	3,710	2,127,861	2,025,654
Diesel and gas oil	59,636	8,519	30,273	4,325	2,127,514	2,194,266
Gasoline	53,547	7,650	187,053	26,722	2,359,145	4,340,663
Kerosene	.....	.....	12,465	1,781	397,269	667,954
Asphalt	7,232	1,033	.....	.....	14,151	56,258
Lubricants	4,156	594	11,941	1,706	442,929	400,297
Other finished oil	.....	.....	.....	.....	469	.....
Coastwise-domestic—						
Fuel oil	152,388	21,770	110,962	15,852	4,932,362	4,417,076
Diesel and gas oil	42,140	6,020	14,780	2,111	960,782	1,114,763
Gasoline	143,815	20,545	202,474	28,925	6,135,083	5,857,232
Kerosene	21,237	3,034	18,914	2,702	662,090	399,831

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	130,147	18,592	.....	.....	771,206	777,911
Fuel oil	66,575	9,511	.....	.....	1,803,078	.....
Diesel and gas oil	.....	.....	.....	.....	233,051	196,644
Gasoline	189,087	27,012	.....	.....	2,621,213	2,463,087
Kerosene	.....	.....	.....	.....	263,804	273,129
Asphalt	.....	.....	.....	.....	425,845	490,039
Lubricants	.....	.....	.....	.....	19,534	16,905
Foreign exports—						
Crude oil	227,739	32,534	432,739	61,820	15,265,639	20,972,787
Fuel oil	365,900	52,271	72,962	10,423	8,718,910	8,606,737
Diesel and gas oil	292,684	41,812	121,433	17,348	7,745,008	6,853,076
Gasoline	228,187	32,598	197,670	28,239	7,926,894	10,156,359
Kerosene	.....	.....	19,307	2,758	1,692,970	1,493,000
Asphalt	7,232	1,033	.....	.....	14,151	56,258
Lubricants	41,780	5,969	15,512	2,216	570,296	573,685
Other finished oil	.....	.....	.....	.....	469	.....
Coastwise-domestic—						
Crude oil	116,237	16,605	271,085	38,726	9,379,128	8,986,286
Fuel oil	166,930	23,847	327,098	46,728	12,236,955	12,753,768
Diesel and gas oil	73,024	10,432	52,091	7,442	2,630,036	2,276,293
Gasoline	550,380	78,626	516,059	73,723	18,115,573	16,815,277
Kerosene	50,449	7,207	24,200	3,457	1,012,857	590,011

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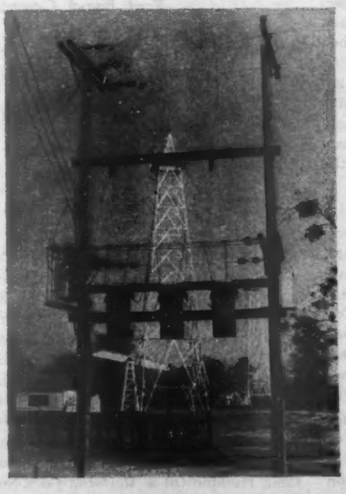

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tion. Previous completions in this field have all shown high gas-oil ratios and large volumes of gas. No. 48-18 Webb of Bandini Petroleum Co., for instance, was completed flowing 550 bbl. of 57.3-gravity oil and 10,000,000 cu. ft. of gas per day from the same zone. No. 86-18 Cook of Union Oil Co. in Section 18-19-16 also showed a low gas-oil ratio.

The next completion in the Northeast Coalinga field should be No. 5-17 S. P. L. of Amerada Petroleum Co. in Section 17-19-16 as the bit is rotating ahead in the pay at 8,240 ft. In the Southeast Coalinga field, 4 miles south of the Northeast Coalinga field, R. S. Lytle is finishing No. 42-7-F in Section 7-20-16 and Superior Oil Co. has landed the water string in No. 3 Cagle in Section 6-20-16 preparatory to an early completion. South of the Southeast Coalinga field, E. A. Parkford has reached a depth of 7,960 ft. but has not yet found pay. The present formation is Kreyenhagen, and a change for the better must be made soon if this outpost is to extend the productive limits of the field. North of this well, but south of production in the Southeast Coalinga field, Universal Consolidated Oil Co. staked a location on an 80-acre parcel in Section 24-20-15 but it is doubtful that actual drilling will be undertaken until conclusion of work on Parkford's outpost. Wilshire Oil Co. is expected to determine conclusively the status of the Northeast and Southeast Coalinga fields within another week or 10 days as this company's well located midway between the two productive areas has passed 7,900 ft. The next 350 ft. should tell the story one way or the other. Operators up to date have assumed that the areas are two separate accumulations and there is ample evidence to justify such opinion.

Kettleman Hills

In the Kettleman North Dome field, Kenda got a gas well when No. 54-20-Q in Section 20-22-18 was turned into tanks following completion in the Temblor at 7,500 ft. as it showed an initial production of 172 bbl. of 60.7-gravity oil and 8,224,000 cu. ft. of gas daily. It was shut in immediately after completion. In the west end of the structure, Superior Oil Co. is drilling up the liner in No. 4 Huffman in Section 29-21-17 preparatory to a resumption of work. This well, originally completed several years ago as a producing well in the Temblor at 8,526 ft., will be cleaned out, but will be deepened to the Eocene if production of the Temblor fails to come up to expectations after the clean-out job.

Canal—Ten Section

Ohio Oil Co. completed an excellent flowing well in the south end of the Canal field of Kern County when No. 14-E Kern County Land in Section 14-30-25 was brought in flowing 1,284 bbl. of 35.6-gravity oil and 1,100,000 cu. ft. of gas per day from the Stevens sand at 8,323 ft. The crew was moved to No. 15-E Kern County Land in Section 14-30-25. Shell Oil Co., Inc., landed a string of 7⅝-in. casing in No. 43-14-A Kern County Land at 8,190 ft. and the well, which is bottomed in oil sand at 8,285 ft., should be tanking oil before the end of the week. Drilling operations in the Ten Section field of Kern County which is located only a short distance southeast of the Canal field have been severely reduced, with the result that Shell Oil Co., Inc., the only operator to develop commercial production within the field, is running only one string of tools.

Los Angeles Basin

In the Newhall-Potrero field of Los Angeles County, Barnsdall Oil Co. completed No. 6 Rancho San Francisco in Section 27-4-17 flowing 780 bbl. of clean 34.8-gravity oil and 550,000 cu. ft. of gas per day from 7,058 ft. Derrick for No. 8 Rancho San Francisco has been completed and this will be the next well to be drilled by Barnsdall Oil Co. in this field which it has exclusively to itself.

In the Aliso Canyon field of Los Angeles County, Tide Water Associated Oil Co. is drilling two wells down to the productive measure but since the formation in this section of the valley is rather hard, progress has been rather slow. Tide Water Associated Oil Co. has this field to itself and will not be bothered with offset drilling as Standard Oil Co. and Union Oil Co. have abandoned their wells in the area along the north line of Tide Water's leases. In the Dominguez field, Union Oil Co. completed No. 12 Carson flowing 751 bbl. of 30.2-gravity oil and 1,000,000 cu. ft. of gas per day from the Miocene with bottom of the hole at 8,023 ft. This new well which was plugged back to 7,905 ft. before completion, was finished with a 7-in. water string cemented at 7,403 ft. and 515 ft. of 5½-in. liner including 497 ft. of perforated landed at 7,902 ft. and 7,654 ft. of 2½-in. tubing.

Island View Oil Co. surprised operators last week when its No. 1 Day in the 5 Points section of the Huntington Beach field showed a natural flow through casing from 4,327 ft. and this extension well, which will lead to considerable drilling in the immediate area, was completed in the conventional manner with a string of tubing and showed an initial pumping of 152 bbl. of 19.5-gravity oil cutting 2 per cent. Preparations are already under way to drill several additional wells down to this zone.

Standard Oil Co. completed a gas well in Yolo County. It is No. 1 Corcoran in Section 29-9-1, total depth 3,682 ft. No production test was made but on a recent formation test at 3,662-82 ft. it produled at the rate of 6,500,000 cu. ft. of dry gas per day.

In an attempt to enlarge the Delano gas field of Kern County, Trico Oil & Gas Co. spudded No. 1 Newland in Section 29-24-23. The Delano gas field is in Kern County but the new well of Trico Oil & Gas Co. is located just over the line in Tulare County. This company discovered the Delano gas field several years ago.

Gulf Coast Fields

(Continued From Page 67)

tomed at 5,462 ft. An electrical survey was made at this depth and side-wall cores are being taken.

In Allen Parish and west of the discovery well of the North Elton field, Stanolind Oil & Gas Co. staked location for No. 1 G. W. Jenkins in Section 23-6s-3w. This field was opened in June by Bel Oil Corp.'s No. 1 Mrs. J. A. Bel, completed as a distillate producer at 7,272-92 ft.

Another interesting wildcat location was made in Assumption Parish by Shell Oil Co., Inc., for No. 1 C. S. Ellis, Section 9-16s-14e. The well is in the west Lake Verret area, where an 11,000-ft. dry hole was recently drilled by the same company.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Danbury field: Sinclair Prairie Oil Co.'s No. 32 Bryan, 2,877 ft., 24 bbl., pumping.

Chambers County

Cedar Point field: Standard Oil Co. of Texas' No. 55-118 State, perforated casing 6,003-34 ft., 485 bbl., ¼-in. choke.

Fort Bend County

Thompson field: H. M. Naylor's No. 2-B Booth, sand 7,705-90 ft., 891 bbl., ¼-in. choke. H. M. Naylor's No. 6-B Booth, 7,927 ft., 200 bbl., ⅝-in. choke.

Galveston County

Dickinson field: Pure Oil Co.'s No. 1 Wooten, perforating casing 8,596-8,601 ft., 107 bbl., 14/64-in. choke.

Harris County

Bammel field: H. M. Harrell's No. 1 Lillian B. Polley, 6,265 ft., gas well. Clear Lake field: Humble Oil & Refining Co.'s No. 15-C West, perforated casing at 5,691-96 ft., gas well. Stanolind Oil & Gas Co.'s No. 1 Coulter, perforated casing 5,845-46 ft., 74 bbl., ¼-in. choke. Clinton field: International Petroleum Corp.'s No. 1 Oates, 3,240 ft., gas well. Fairbanks field: Carlton and others' No. 2 Whitehead-Rash, 6,883 ft., dry and abandoned. Friendswood field: Humble Oil & Refining Co.'s No. 20 Gray, sand 6,004-48 ft., 535 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 40-B Humble-West, 6,761 ft., dry and abandoned. Tomball field: Humble Oil & Refining Co.'s No. 8 Gossett, 5,564 ft., gas well.

Jefferson County

Spindletop field: Abbott Production Co.'s No. 1 Sun Oil Co., 800 ft., .13 bbl., pumping.

Liberty County

Hull field: Houston Production Co.'s No. 9 Hannah, 5,290 ft., gas well.

Michigan Field Report

Oil Wells 13, Dry Holes 17, Unusual Record Past Week

By
O. C. PRESSPRICH

SAGINAW, Mich., Oct. 2.—A preponderance of dry holes chilled the enthusiasm for wildcatting in Michigan last week as new production was concentrated almost entirely in the Walker field of Kent County, which recorded eight of the 13 new oil wells and accounted for all but 1,250 bbl. of the potential increase in daily production. There were 16 oil tests abandoned as dry holes, as well as an unsuccessful gas test. It was the first time in months that dry holes outnumbered new producing wells.

Walker's new production was concentrated in proved territory, initial from the eight wells ranging from 1,800 bbl. down to 90 bbl. per day. Three others did 800 bbl. or better. The only other sizable addition for the week was in Clare County, where McClanahan Oil Co., returning to the Central Michigan production picture, completed the No. 3 State-Clare in Section 33 of Redding Township. The well, good for 666 bbl. a day naturally, is at the southwestern edge of Redding production and may cause new drilling in that area. The well, having total depth of 3,883½ ft., encountered gas pressure considerably higher than it was found in other wells northeasterly.

Certain-Teed Products Co.'s No. 2 fee in Section 4 of Walker, the Wolverine Natural Gas Co.'s No. 3 Frances Hoey in Section 30, Smith Petroleum Co.'s No. 4 Riddering and the Weller-McKay well, also in Section 30, were the principal additions to southwestern Michigan production. A failure in Gaines Township, 5n-11w, first test in that township, was taken as an indication of the probable limits of the Kent production to the southeast.

Except for a 145-bbl. producer in Salem Township, there was little activity in Allegan County. Dry holes were abandoned in Monterey and Wayland townships, both of them extensions tests. The Bloomingdale Development Co.'s Tabor test in Pipestone Township of Berrien County was another wildcat failure in the southwestern area. So was the Smith Petroleum Co. drilling in Section 36 of Comstock, Kalamazoo County, Township 2s-10w.

Ottawa County also had its big percentage of failures. Sohio Producing Co. abandoned two tests in Section 24 of Jamestown Township, 5n-13w, and the Tallmadge Township field was the scene of another dry hole. There, however, the failure was offset by Wolverine Natural Gas Corp.'s No. 1 Thomas in Section 25, which rated 250 bbl. naturally. Freeman Oil Co. recorded a failure in Ottawa's Zeeland Township, 5n-14w.

Most severe of the failures, so far as particular areas were concerned, were those in Van Buren County, Five of six completions were dry and the single producer, in Bangor Township, rated only 25 bbl. a day after acid treatment. Arlington, Bloomingdale and Lawrence Townships were the scenes of the failures.

Projected new development also dropped off as the State Conservation Department's weekly permit list showed only 23 new locations, scattered in 10 counties, Allegan getting four, Clare three, Kent five, Van Buren three, Ottawa three, Kalamazoo, Arenac, Monroe, Tuscola and Roscommon one each.

Hopes for production in Roscommon County also were jolted as Virgil R. D. Kirkham abandoned No. 1 Neer in Lyon Township. Attention in Isabella County centered in the W. R. Borough's No. 1 Walsh wildcat in Section 18 of Sherman Township, where deeper testing of the Dundee-Monroe level was scheduled. The Walsh test had a good show of oil in the Traverse some weeks ago. Drilled into the Dundee, water appeared. Pipe then was reset at 3,758 ft., the probable Dundee top. How deep the test will go has not been determined. Cleanout operations were completed and drilling renewed on No. 6 Carter in Section 18 of Porter Township, Midland County, for the first deep test in the one-time prolific field. The Carter well was completed in February 1934 and has been producing since that time, but the operators decided to test Monroe and Sylvania formations in a search for deeper pay zones.

Production was starting this week at Caro Refineries, Caro, Mich., handling production from Wisner and Akron pools in Tuscola County. Don and Duane Adams began the refinery project 2 years ago. Stockholders include Elmer Brehm, Norman Carr, David Kennedy, K. M. Lindermann and Keith Rose.

Following is the Michigan completion summary for the week:

Allegan County

Monterey Township (3n-13w): C. E. Weller abandoned No. 1 Stanley Iwaniec, SE NE NE Section 1, as dry at 1,785 ft.

Salem Township (4n-13w): Voorhees Drilling Co. and others got 145 bbl., naturally, from No. 1 Joseph Schumaker, SW NW NW Section 12, completed at a depth of 1,591 ft.

Wayland Township (3n-11w): C. E. Weller and R. C. Jones' No. 1 Marie Junek, NW NW SW Section 14, was dry and abandoned at 1,941 ft.

Arenac County

Adams Township (19n-3e): L. G. Thompson completed a medium well, acidizing to get production of 163 bbl. a day at 3,009 ft. from No. 1 Julian Dybeckl, NE NE NW Section 26.

Berrien County

Pipestone Township (5s-17w): Bloomingdale Development Co.'s No. 1 William Tabor, NW NW SE Section 33, failed to show oil and was abandoned at 1,304 ft.

Clare County

Lincoln Township (18n-5w): Taggart Brothers, Inc.'s No. 11 William Haley, C SE¼ Section 29, failed as a natural-gas test, drilling halting at a depth of 1,552 ft.

Redding Township (19n-6w): McClanahan Oil Co., returning to activity in the Central Michigan area, completed No. 3 Clare County-State, NW NW SW Section 33, at 3,883½ ft. Potential was 666 bbl. a day, naturally.

Kalamazoo County

Comstock Township (2s-10w): Another Comstock failure was registered as Smith Petroleum Co.'s No. 1 G. D. Johnson, C S½ SW NW Section 36, was abandoned as dry at 1,408 ft.

Kent County

Gaines Township (5n-11w): The E. W. Collins's No. 1 Homer A. Snyder wildcat, SE SE SW Section 16, first Gaines test, failed to get production and was abandoned at 2,283 ft.

Walker Township (6n-12w): Certain-Teed Products Co. completed No. 2 fee, NE SE NE Section 4, at 1,775 ft. After acid potential was 1,800 bbl. a day, the week's best well in Michigan. Lenoran Petroleum Co.'s No. 4 Nelson Maynard, NW NW SW Section 4, was rated 348 bbl. a day after acid treatment. Completion depth was 1,822 ft.

Walker Township (7n-12w): Fanfare, Inc., newcomer to the Walker field, rated 90 bbl. a day from No. 2 Katherine Schipper, SE NW NE Section 31, after an acid treatment. Total depth was 1,858 ft. Fisher & McCall Oil & Gas, Inc.'s No. 1 M. E. Beaumont, C E½ SW NW Section 29, completed at 1,927 ft., after an acid treatment, produced 100 bbl. a day. Production after acid treatment was estimated at 500 bbl. a day from M. L. Jorgensen's No. 1 John H. Schouwink, SE SW NE Section 30, completed at 1,916 ft. Smith Petroleum Co. and others completed No. 4 George Riddering, NE NE SE Section 30, at 1,893 ft., getting initial production. naturally, at the rate of 912 bbl. a day C. E. Weller and Frank D. McKay's No. 1-A McKay, C S½ SE NW Section 30, was rated at 800 bbl. a day, after an acid treatment, total depth 1,919 ft. Natural initial potential of 1,000 bbl. a day was the record for Wolverine Natural Gas Co.'s No. 3 France Hoey, SE NE SW Section 30, with total depth of 1,890 ft.

Midland County

Ingersoll Township (13n-2e): W. F. Brown abandoned No. 1 Lina Coleman, C W½ NW SW Section 11. The test failed to show at 2,900 ft.

Ottawa County

Jamestown Township (5n-13w): Two Sohio Producing Co. tests were abandoned as dry holes in Section 24. They were No. 1 Henry Hilzcy, SW SW SW, total depth 1,820 ft., and No. 1 Weidenfellow, NW SW SE, abandoned at 1,069 ft.

Tallmadge Township (7n-13w): Twin Drilling Co.'s No. 1 C. F. Woodman, NE SW SE Section 3, was dry and abandoned at 2,000 ft. Wolverine Natural Gas Corp. got a well rating 250 bbl. a day, naturally, in Section 25, the producer being No. 1 R. E. Thomas, SE NE SE, completed at 1,872 ft.

Zeeland Township (5n-14w): Freeman Oil Co.'s No. 1 Henry Yntema, SE SE NE Section 25, was a failure, abandoned as dry at 1,668 ft.

Roscommon County

Lyon Township (24n-4w): Another North Central Michigan test was marked a failure as Dr. Virgil R. D. Kirkham abandoned No. 1 William Neer, NW SE SW Section 26, at 3,253 ft.

Van Buren County

Arlington Township (2s-15w): F. Heidt and V. H. Coffman abandoned No. 1 John Cleveland, NW NW NW Section 31, at 1,181 ft.

Bangor Township (2s-16w): Blood & Hendershott's No. 1 Lulu Drake, NE SW NW Section 28, was abandoned at 1,048 ft., but the same operators' No. 2 William Westcott, NE SW NE Section 28, was a small producer, rating 25 bbl. a day after an acid treatment. The well's total depth was 1,039 ft.

Bloomingdale Township (1s-14w): Bloomingdale saw two tests abandoned as dry. They were the Walter E. Bochenek's No. 1 E. Ampey, S½ S½ NE NW Section 13, and Huffman Drilling Co.'s No. 1 Frank Lane, NW NW NE Section 5. Total depth of the Ampey well was 1,290 ft., that of the Lane well 1,294 ft.

Lawrence Township (3s-15w): Great Lakes Crude Oil Co.'s No. 1 Abrams estate, NW SE SW Section 32, dry and abandoned at 1,022 ft.

East Texas Fields

(Continued from Page 71)

Moore in Limestone County, in the G. W. McGrew Survey, 1½ miles northeast of Coolidge, and are drilling below 1,510 ft. Site is 412 ft. from the northwest line and 2,640 ft. from the southwest line of a 98-acre tract in the survey. In Red River County Dave Flesch has located his No. 1 Bailey in the J. Robbins Survey about 1 mile west of the town of Bagwell. Site is 1,000 ft. from the north line and 330 ft. from the east line of a 173-acre tract in Block 5. It is a 3,500-ft. test. In Van Zandt County O. W. Killiam has located No. 1 Republic Insurance Co., J. Salinga Survey, 2 miles northeast of Myrtle Springs. Drill site is 330 ft. from the southwest line and 330 ft. from the northwest line of a 61-acre tract.

The northwestern Navarro County portion of the Flag Lake field was in line for its second oil well as the week closed, with the Topaz Oil Co.'s No. 3 Tram-

mel being bottomed at 3,004 ft. after coring 8 ft. of oil sand. Pipe is to be set on top of the pay section and the well will be tested the first of the week. Location is 660 ft. south and 20° west of the same company's No. 2 Trammel, which was completed 2 weeks ago to extend the Flag Lake pool across the river and into Navarro County. Both wells are on a Humble farmout and in the A. C. Kyser Survey.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Anderson County

In the Long Lake field, Tide Water Associated Oil Co. and Seaboard Oil Corp.'s No. 12 Shaw & Cern, D. Parker Survey, pay section from 5,208-5,324 ft., completed for 111,000,000 cu. ft. of gas, daily.

Franklin County

In the Talco field, Humble Oil & Refining Co.'s No. 11 Penn fee, N. Dembriski Survey, pay section from 4,233 to 4,391 ft., perforated casing from 4,248-56 ft. and completed for 393 bbl. daily, pumping.

Freestone County

In the old Wortham field, McNeil Petroleum Co.'s No. 1 W. E. Smith, S. McNulty Survey, topped sand at 2,984 ft., set 5½-in. casing at 2,971 ft. and completed for 27.59 bbl. in 24 hours with 90 per cent salt water.

Limestone County

A wildcat test, J. R. Bunn's No. 1 Winmilk J. C. Neil Survey, 2½ miles northwest of Tehuacana, topped the Woodbine at 2,470 ft. and was dry and abandoned at a total depth of 2,493 ft.

Navarro County

In the old Powell field, Guy Sitton's No. 1 Flemming, J. Harris Survey, drilled sand from 1,545-55 ft. and completed for 22 bbl. fluid, 50 per cent salt water, in 24 hours.

EAST TEXAS FIELD COMPLETIONS

(One-hour gages)

Gregg County—Longview Area

McDonald-Campbell Oil Co.'s No. 5 J. W. Harrison, 3,519-38 ft., 50 bbl. Magnolia Petroleum Co.'s No. 26 R. B. White, 3,500-18 ft., 92 bbl. Stanolind Oil & Gas Co. and Tide Water Associated Oil Co.'s No. 19 J. W. Aiken, 3,525-3,621 ft., 49 bbl.

Eastern Fields

(Continued from Page 70)

ft. in the Laura Flowers test; Alpha Gas Co. at 200 ft. in No. 1 L. W. Legg.

In Malden district, United Fuel Gas Co. is rigging up on Mattie J. Krantz land. In Elk district Columbian Carbon Co. is drilling at 4,616 ft. in the Lelia Hanna test, and at 3,540 ft. in the Tignor and Jordon test. In Union district Godfrey L. Cabot, Inc., is building a rig for the Mansfield Jones test.

Deep Tests

In Jackson County Joe Rubin and others had reached 4,035 ft. on the R. G. Starr farm in Ravenswood district. In Ripley district, the Columbian Carbon Co. was drilling at 3,820 ft. in the John F. Parsons test.

In Washington district, Jackson County, United Fuel Gas Co. is drilling at 3,722 ft. in the Sarah Jane Janham test and at 300 ft. in the Monroe Jones and others test. United Carbon Co. is down 2,870 ft. on the W. W. Riley and others land.

In Washington district, Columbian Carbon Co. made a location on the Helen M. Hoge farm, elevation 994.1 ft. In Ripley district Everett Starcher and others are drilling at 4,985 ft. on the Roy O. Pfost farm.

Canadian Fields

By VICTOR LAURISTON

CHATHAM, Ont., Sept. 30.—Pipe-line runs from the Turner Valley field to Calgary refineries in August totaled 721,881 bbl. compared with 816,625 bbl. in July. The July figures were the highest of the year and the August figures second highest. The previous high was 769,574 bbl. for September 1938.

For the 8 months of 1939, refinery deliveries from Turner Valley totaled 4,507,084 bbl. compared with 3,790,636 bbl. for the same period last year. It is anticipated that deliveries for the 12 months of 1939 will exceed 6,000,000 bbl., an all-time high.

Of the August deliveries, Imperial Oil, Ltd., took 560,244 bbl. against 572,059 bbl. in July, and British American Oil Co. took 161,637 bbl., against 264,566 bbl. in July.

New Allowable Set

Under the new schedule of allowables for Turner Valley, increasing the total from 22,000 to 23,000 bbl., which became effective from September 19, most of the 1,000-bbl. increase went to two new producers, Anglo-Canadian's No. 6, with temporary allowable of 417 bbl., and Extension Royalties' No. 2, with 468 bbl.

In the new schedule, Home Oil Co.'s No. 2 Millarville is still the largest producer, increased from 682 to 716 bbl. Royal Canadian's No. 2 ranked second with 545 bbl. and Vulcan-Brown Petroleums third with 517 bbl. Other large producers included Royalite's No. 30, with 486 bbl.; Royalite's No. 36, 485 bbl.; Northwest-Hudson's Bay's No. 1, 484 bbl.; Frontier Royalties' No. 1, 483 bbl.; and Extension Royalties' No. 2, temporary allowable, 468 bbl.

Among the newer completions, Winalta Royalties' No. 1, LSD 15, Section 5-19-2w5, was increased from 349 to 419 bbl. Calwin Royalties' No. 1, LSD 1, same section, was up from 150 to 200 bbl. Royalite's No. 39, LSD 3, Section 29-18-2w5, was increased from 200 bbl. temporary allowable to 438 bbl.

Turner Valley Completions

In Section 5-19-2w5, West Central Turner Valley, Royalite Oil Co.'s No. 40, LSD 4, finished in the Madison at 7,828 ft., was given allowable of 290 bbl.

In Section 17-18-2w5, Extension Royalties' No. 2, LSD 11, finished at 8,254 ft. after getting the limestone at 7,783 ft., has repaired casing broken about 300 ft. from the surface, and will test for permanent allowable. Temporary allowable was set at 468 bbl. Anglo-Canadian Oil Co.'s No. 6, LSD 3, same section, finished at 8,228 ft., with temporary allowable of 417 bbl., flowed 2,012 bbl. through 1-in. choke on official test, and has been increased to 619 bbl., making it the second largest producer in the field. This brings the total output of Anglo-Canadian wells to around 4,300 bbl. a day, out of an aggregate allowable of 23,000 bbl.

Tests in the Lime

In Section 25-19-2w5, West Central area, Argus Royalties' No. 1, LSD 4, got the Madison lime at 6,909 ft. and cemented casing at 6,917 ft. It is deepening below 6,979 ft. This is regarded as one of the most important west-flank tests now drilling, as it is almost midway between the north and south proved areas, and somewhat down the structure from Dalhousie's No. 8, which finished a dry hole at 6,600 ft. in March 1937. The outcome will determine, to a considerable extent, whether the west-flank crude production is continuous from north to south with the Dalhousie well an isolated dry spot, or whether there is a considerable unproductive area between north and south fields. The unproven stretch on the west flank extends about 9 miles from north to south, with the Argus well almost midway. Argus' No. 1 got the lime at 6,909 ft., at an elevation of 2,744 ft. below sea level. Scottish Petroleums' No. 1 in the south end of the field determined the oil-water line on the west flank slightly above the 4,500-ft. mark below sea level; and it is indicated that, if Argus' No. 1 is productive, the width of the oil zone at this point will be considerably greater than the width in the south end of the field.

In Section 32-18-2w5, Royalite Oil Co.'s No. 42, LSD 4, is below 8,145 ft. after getting the lime at 8,022 ft. and cementing casing 10 ft. in.

In Section 29-18-2w5, Royal Canadian Oil Co.'s No. 3, LSD 12, got the Madison limestone at 8,379 ft. and cemented casing at 8,411 ft. It is deepening in the lime, and has logged about 450 ft. higher than Scottish Petroleums' No. 1, which defined the western limit.

West Central Turner Valley

In Section 18-19-2w5 Davolite Oil Co.'s No. 1, LSD 10, standing cemented at 1,880 ft., will probably resume next month.

In Section 6-19-2w5 East Crest Oil Co.'s No. 5, LSD 9, is spudding. Drilling is being handled by Crest Royalties, Ltd., a new organization, in return for a production interest. It is just north of East Crest's No. 4, LSD 8, No. 4, which has allowable of 115 bbl., has been shot, and is cleaning out. Kamalta Oils' No. 1, LSD 1, is rigging.

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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status—
Union Oil, No. 21 Squires, Santa Maria, S. Barbara	26- 9-34	4,058	P.B. 3,888 ft.
Sun-Bell Oil, No. 1 Sun, Lompoc, Santa Barbara	29- 8-34	3,196	salt wtr.
Lomas, E. H., No. 1 Reg, Santa Maria, S. Barbara	29-10-34	1,984	sd. sh. drig.
Petrol Corp., No. 5-21 Magenheimer, Gato R., S. B.	9- 8-32	4,057	completing
Richfield Oil Corp., No. 3 Marcos, Sisquoc, S. Bar.	29- 6-29	2,500	dry; abd.
Sunset Oil, No. 1 Shore, Carpinteria, Santa Barbara	32- 4-25	2,435	redrlg. 1,898
Coronet Oil, No. 1 Crown, Ojai, Ventura	17- 4-21	2,298	idle
St. Louis Oil, No. 1 Williamson, Sespe, Ventura	1- 4-20	2,350	sd. sh. drig.
Section 20 Oil, No. 21, Sespe, Ventura	20- 5-19	4,157	salt wtr.
Renard Oil Corp., No. 1, Sespe, Ventura	6- 4-19	307	sd. sh. drig.
Speik Oil, No. 2 Hill, Sespe, Ventura	33- 5-19	3,966	idle
Galveston Oil, No. 1 Basola, Bardsdale, Ventura	5- 3-19	3,139	cleaning out
K. C. Oil, No. 1 Marr, Santa Susana, Ventura	32- 3-17	1,018	sd. sh. drig.
Bolsa Chica Oil, No. 5 Snow, Piru, Ventura	4- 4-18	2,975	cmtd. 2,640
Continental Oil, No. 12 Grubb, San Miguelito, Ven.	24- 3-24	4,898	sd. sh. drig.
C. C. M. Oil, No. 5 W.O.G., Padre Canyon, Ventura	23- 3-24	6,850	sd. sh. drig.
C. C. M. Oil, No. 29-B Hobson, Rincon, Ventura	16- 3-24	4,790	O.S. drig.
Tide Water A. O., No. 40 V.L.W., Vent. Ave., Vent.	25- 3-23	10,670	cleaning out
Tide Water A. O., No. 42 V.L.W., Vent. Ave., Vent.	23- 3-23	7,360	sd. sh. drig.
Tide Water A. O., No. 44 V.L.W., Vent. Ave., Vent.	23- 3-23	6,674	sd. sh. drig.
Tide Water A. O., No. 15 McGonigle, Vent. Ave., V.	23- 3-23	8,090	sd. sh. drig.
Tide Water A. O., No. 16 McGonigle, Vent. Ave., V.	23- 3-23	5,992	sd. sh. drig.
Tide Water A. O., No. 66 Lloyd, Ventura Ave., Ven.	26- 3-23	5,360	sd. sh. drig.
Tide Water A. O., No. 121 Lloyd, Vent. Ave., Vent.	23- 3-23	7,151	sd. sh. drig.
Tide Water A. O., No. 123 Lloyd, Vent. Ave., Vent.	23- 3-23	9,065	idle
Tide Water A. O., No. 21 Hartman, Vent. Ave., V.	22- 3-23	3,740	sd. sh. drig.
Shell Oil, No. 102 Taylor, Ventura Ave., Ventura	29- 3-23	6,857	flow 1,340 b.d.
Shell Oil, No. 104 Taylor, Ventura Ave., Ventura	21- 3-23	4,501	sd. sh. drig.
Shell Oil, No. 34 Edison, Ventura Ave., Ventura	21- 3-23	8,605	O.S. drig.
General Pet. Corp., No. 16 Barnard, Vent. Ave., V.	28- 3-23	7,958	fish bit
Cal. Alliance Pet., No. 1 Hartman, Vent. Ave., Vent.	22- 3-23	6,850	sd. sh. drig.
Lloyd Corp., No. 3 Dabney, Ventura Ave., Ventura	23- 3-23	8,140	sd. sh. drig.
Lloyd Corp., No. 4 Dabney, Ventura Ave., Ventura	23- 3-23	7,963	sd. sh. drig.
Trico O. & G., No. 1 Newland, Delano gas field, Kn.	29-24-23	120	sd. sh. drig.
Belridge Oil, No. 1-27, North Belridge, Kern	1-28-20	6,010	sd. sh. drig.
Belridge Oil, No. 28-15, North Belridge, Kern	28-27-20	4,940	sd. sh. drig.
Belridge Oil, No. 26-39, North Belridge, Kern	26-27-20	8,275	redrlg. 7,984
Tide Water A. O., No. 24, North Belridge, Kern	21-27-20	7,094	sd. sh. drig.
O'Reilly, Frances, No. 2 Seale, Edison, Kern	5-30-29	3,960	hd. sd. drig.
Petrex, Inc., No. 2 Metro, Edison, Kern	6-30-29	4,206	cmtd. 3,990
Grizzly Bear Oil, No. 4 Kelly, Round Mt., Kern	6-28-28	1,770	sd. sh. drig.
Vedder Pet., No. 1 Larkin, Round Mountain, Kern	12-28-28	1,886	pmp. 140 b.d.
Dick, W. T., No. 3 Kern, Kern River, Kern	34-28-28	580	sd. sh. drig.
Dick, W. T., No. 4 Kern, Kern River, Kern	34-28-28	620	sd. sh. drig.
Dick, W. T., No. 5 Kern, Kern River, Kern	34-28-28	480	sd. sh. drig.
Helm & Smith, No. 14 Kern, Kern River, Kern	34-28-28	540	sd. sh. drig.
D. B. K., No. 10 Kern, Kern River, Kern	34-28-28	340	sd. sh. drig.
Ring Oil, No. 5 Jones, Mount Poso, Kern	29-26-28	1,895	dry; abd.
Chevalier Oil, No. 4 S.P., Mount Poso, Kern	3-27-28	1,506	P.B. 1,501
Hill and associates, No. 1-A West, Mount Poso, Kern	35-26-28	688	sd. sh. drig.
Crestmont Oil, No. 1 McNeil, Mount Poso, Kern	26-26-27	2,804	dry; abd.
Dilamar Oil, No. 3 Quinn, Jasmin, Kern	12-25-27	2,902	idle
Hogan Pet., No. 4 Peters, Mountain View, Kern	5-31-29	5,592	P.B. 5,500
Texas, No. 2 Jewett, Arvin, Kern	16-31-29	7,750	redrlg. 6,105
Standard Oil, No. 5 Jewett, Arvin, Kern	16-31-29	5,350	sd. sh. drig.
Western Gulf Oil, No. 43-B KCL, Fruitvale, Kern	22-29-27	3,826	completing
Meridian Pet. Corp., No. 2 Deep Test, Fruitvale, K.	23-29-27	7,990	gr. sd. drig.
General Pet. Corp., No. 1 Mattei, Lerdo, Kern	19-28-27	3,692	sd. sh. drig.
Union Oil, No. 4-23 Bowerbank, Goose Lake, Kern	25-29-24	8,280	sd. sh. drig.
Union Oil, No. 41-34, KCL, Rio Bravo, Kern	34-28-25	8,780	fish D.P.
Superior Oil, No. 1 Weber, Rio Bravo, Kern	27-28-25	133	sd. sh. drig.
Standard Oil, No. 1 Ross, Greeley, Kern	20-29-26	10,480	sd. sh. drig.
Standard Oil, No. 11-20, KCL, Greeley, Kern	18-29-26	7,550	sd. sh. drig.
Standard Oil, No. 11-21, KCL, Greeley, Kern	18-29-26	5,562	sd. sh. drig.
Standard Oil, No. 12-5, KCL, NW Greeley, Kern	7-29-26	9,020	gr. sd. drig.
General Pet. Corp., No. 1 Sullivan, NE Greeley, Kn.	12-29-26	10,198	hd. sd. drig.
Continental Oil, No. 2-D, KCL, Bellevue, Kern	14-30-26	13,420	hd. sh. drig.
Shell Oil, No. 72-25-A, KCL, Ten Section, Kern	25-30-25	7,894	sd. sh. drig.
Tide Water A. O., No. 46-7-E, KCL, Strand, Kern	7-30-26	6,860	sd. sh. drig.
Ohio Oil, No. 14-E, KCL, Canal, Kern	14-30-25	8,325	flow 1,282 b.d.
Ohio Oil, No. 15-E, KCL, Canal, Kern	14-30-25	196	sd. sh. drig.
Shell Oil, No. 32-14-A, KCL, Canal, Kern	14-30-25	8,249	O.S. drig.
Richfield Oil Corp., No. 12-33-A, KCL, Tupman, Kn.	33-30-25	9,331	P.B. 9,040
Richfield Oil Corp., No. 67-4-B, KCL, Cole's Lv., K.	4-31-25	8,660	sd. sh. drig.
Richfield Oil Corp., No. 76-4-B, KCL, Cole's Lv., K.	4-31-25	5,975	sd. sh. drig.
Standard Oil, No. 20-2, KCL, Cole's Levee, Kern	9-31-25	8,180	sd. sh. drig.
Standard Oil, No. 20-3, KCL, Cole's Levee, Kern	9-31-25	7,632	sd. sh. drig.
Standard Oil, No. 20-4, KCL, Cole's Levee, Kern	9-31-25	7,948	sd. sh. drig.
Ohio Oil, No. 4-F, KCL, Cole's Levee, Kern	11-31-25	7,270	sd. sh. drig.
Ohio Oil, No. 5-F, KCL, Cole's Levee, Kern	10-31-25	5,665	sd. sh. drig.
Tide Water A. O., No. 81, KCL, Cole's Levee, Kern	14-31-25	9,829	cleaning out
Union Oil, No. 58-11, KCL, Cole's Levee, Kern	11-31-25	9,376	sd. sh. drig.
Gibson Oil, No. 6 O'Brien, Midway-Sunset, Kern	6-11-23	2,940	pmp. 45 b.d.
C. C. M. Oil, No. 12-6 fee, Midway-Sunset, Kern	6-32-23	2,140	idle
Baker & Sonne, No. 1 Leyse, Midway-Sunset, Kern	20-32-23	2,441	sd. sh. drig.
Quality Oil, No. 6 W.P., Midway-Sunset, Kern	27-32-23	1,975	P.B. 1,941
Texas, No. 35 Sunset, Midway-Sunset, Kern	32-32-24	3,207	pmp. test.
Merritt-Annex Oil, No. 8 Fried, Midway-Sunset, K.	25-12-24	2,350	cmtd. 2,300
General Pet. Corp., No. 1 B.V.A., Midway-Sunset, K.	1-31-24	9,101	hd. sh. drig.
Shell Oil, No. 45-9 B.V.A., Midway-Sunset, Kern	9-32-25	4,978	sd. sh. drig.
National Oil, No. 33 Sunset, Midway-Sunset, Kern	35-32-23	2,409	rig to pmp.
Standard Oil, No. 3-5-C fee, Midway-Sunset, Kern	5-32-23	2,497	rig to pmp.
Richfield Oil Corp., No. 81-36 B.V.A., B.V.L., Kern	36-31-25	5,570	sd. sh. drig.
Richfield Oil Corp., No. 1 KCL, Wheeler Ridge, K.	28-11-20	11,168	P.B. 10,856
Continental Oil, No. 1-F, KCL, San Emidio, Kern	5-10-21	8,740	gr. sd. drig.
Bannow, L. E., No. 1 Irwin, San Emidio, Kern	15-10-23	2,040	P.B. 1,126
Shell Oil, No. 52-2-13-A, KCL, San Emidio, Kern	13-11-22	11,190	hd. sh. drig.
French, R. C., No. 1 Royal, San Emidio, Kern	5-10-21	718	idle
Par Pet., No. 1 Line, Antelope Valley, Kern	32-25-17	2,030	sd. sh. drig.
Richfield Oil Corp., No. 1 Gulf, Cantua, Fresno	4-17-15	9,000	dry; abd.
Section 30 Oil, No. 6 Coalinga, W Coalinga, Fresno	30-19-15	1,260	O.S. drig.
Standard Oil, No. 73-19-B fee, NE Coalinga, Fresno	19-19-16	8,270	tested wet
Amerada Pet. Corp., No. 5-17 S.P.L., NE Coal., Fres.	17-19-16	8,025	cmtd. 7,989
Wilshire Annex Oil, No. 1 Kearns, C Coal., Fresno	30-19-16	7,791	sd. sh. drig.
Lytle, R. S., agent, No. 42-7-F, SE Coalinga, Fresno	7-20-16	7,040	O.S. drig.
Lytle, R. S., agent, No. 86-7-F, SE Coalinga, Fresno	7-20-16	8,260	flow 2,175 b.d.
Lytle, R. S., agent, No. 28-18-F, SE Coalinga, Fresno	18-20-16	6,398	hd. sd. drig.
Texas, No. 3 Exeter fee, SE Coalinga, Fresno	6-20-16	6,480	sd. sh. drig.
Standard Oil, No. 62-13-C fee, SE Coalinga, Fresno	13-20-15	6,070	sd. sh. drig.
Standard Oil, No. 86-13-C fee, SE Coalinga, Fresno	13-20-15	7,185	O.S. drig.
Superior Oil, No. 5 fee; SE Coalinga, Fresno	7-20-16	7,120	hd. sh. drig.
Superior Oil, No. 3 Cagle, SE Coalinga, Fresno	6-20-16	6,881	O.S. drig.
Parkford, E. A., No. 1 Valley, SE Coalinga, Fresno	24-20-15	7,960	hd. sh. drig.
Superior Oil, No. 4 Huffman, Kettleman N, Fresno	29-21-17	8,526	cleaning out
K. N. D. A., No. 54-20-Q, Kettleman North, Kings	29-22-18	7,500	flow 174 b.d.
K. N. D. A., No. 25-22-Q, Kettleman North, Kings	22-22-18	6,090	sd. sh. drig.
K. N. D. A., No. 47-22-Q, Kettleman North, Kings	22-22-18	7,890	sd. sh. drig.
K. N. D. A., No. 25-26-Q, Kettleman North, Kings	26-22-18	7,736	sd. sh. drig.
K. N. D. A., No. 47-26-Q, Kettleman North, Kings	26-22-18	1,892	sd. sh. drig.
K. N. D. A., No. 41-28-Q, Kettleman North, Kings	28-22-18	5,863	br. sh. drig.
Standard Oil, No. 2-19-J, Kettleman North, Fresno	19-21-17	10,680	sd. sh. drig.
Standard Oil, No. 27-19-J, Kettleman North, Fresno	19-21-17	8,840	redrlg. 8,828
Standard Oil, No. 72-19-J, Kettleman North, Fresno	19-21-17	8,820	redrlg. 8,597
Standard Oil, No. 27-7-Q, Kettleman North, Kings	7-22-18	9,000	sd. sh. drig.
Standard Oil, No. 43-7-Q, Kettleman North, Kings	7-22-18	7,296	sd. sh. drig.
Standard Oil, No. 63-17-Q, Kettleman North, Kings	17-22-18	8,499	cleaning out
Standard Oil, No. 52-21-Q, Kettleman North, Kings	21-22-18	2,197	sd. sh. drig.
Standard Oil, No. 85-21-Q, Kettleman North, Kings	21-22-18	6,867	br. sh. drig.
Standard Oil, No. 32-27-Q, Kettleman North, Kings	27-22-18	5,069	sd. sh. drig.
Standard Oil, No. 51-27-Q, Kettleman North, Kings	27-22-18	7,830	sd. sh. drig.
Newton, S. M., No. 1 Stafford, Panorama, San L. O.	18-31-21	5,030	sd. sh. drig.
Epco, Inc., No. 1 Epco, San Miguel, San Luis Obispo	27-25-13	6,090	sd. sh. drig.
Priest Valley Pet., No. 1 Flat, Priest Vy., Monterey	22-20-12	822	sd. sh. drig.
Standard Oil, No. 1 Corcoran, Fair. Knowles, Yolo	29- 9- 1	3,682	no test
Texas, No. 3 Eureka, Eureka, Humboldt	21- 3- 1	5,067	completing
Silver Creek Oil, No. 1, Los Pinos, San Benito	11-17-11	260	sd. sh. drig.
Utilities Pet., No. 1, Rough and Ready Is., S. Joaquin	7- 1- 6	3,891	sd. sh. drig.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status—
O'Donnell, J. E., No. 73 Lomita, Torrance, Los An.	30- 4-13	5,271	dry; abd.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd., cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg., or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill-stem test.
D.P., drill pipe
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe-line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrk. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas, and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.O.O., waiting on orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Blackwell & Sunde, No. 1 South, Torrance, Los A.	30-	4-13	992	sd. sh. drlg.
Union Oil, No. 12 Carson, Dominguez, Los Angeles	33-	3-13	8,032	P.B. 7,905
Union Oil, No. 71 Callender, Dominguez, Los Angel.	32-	3-13	7,398	sd. sh. drlg.
Union Oil, No. 72 Callender, Dominguez, Los Angel.	29-	3-13	7,285	sd. sh. drlg.
Barnsdall Oil, No. 1 Darling, Rosecrans, Los Angel.	20-	3-13	8,518	no kick
South Cal. Pet. Corp., No. 1 Slabaugh, Rose., Los A.	19-	3-13	7,360	sd. sh. drlg.
Basin Oil, No. 1 Beloil, Potrero, Los Angeles	28-	2-14	5,912	sd. sh. drlg.
Basin Oil, No. 5 Basin, Potrero, Los Angeles	34-	2-14	2,941	swabbing
Basin Oil, No. 6 Basin, Potrero, Los Angeles	34-	2-14	1,282	sd. sh. drlg.
Vulcan Oil, No. 1 Corner, Playa Del Rey, Los Ang.	22-	2-15	7,398	dry; abd.
Tide Water A. O., No. 12 Porter, Aliso Can., L. A.	27-	3-16	1,698	hd. sd. drlg.
Tide Water A. O., No. 11 Fernado, Aliso Can., L. A.	27-	3-16	3,460	hd. sd. drlg.
Redwood Oil, No. 1-A Mitchell, Mint Canyon, L. A.	22-	4-15	251	sd. sh. drlg.
Tamas Oil, No. 1 Perkins, Newhall, Los Angeles	11-	3-16	1,040	sd. sh. drlg.
Barnsdall Oil, No. 6 R.S.F., Newhall, Los Angeles	27-	4-17	7,058	swabbing
General Pet. Corp., No. 13 S.P., Wilmington, L. A.	2-	5-13	2,590	sd. sh. drlg.
Brookline Oil, No. 4 Harbor, Wilmington, Los An.	4-	5-13	3,477	sd. sh. drlg.
Hancock Oil, No. 22-A Harbor, Wilmington, Los A.	2-	5-13	4,050	O.S. drlg.
Long Beach Dev., No. 10-Y Harbor, Wilming., L. A.	2-	5-13	3,951	sd. sh. drlg.
Long Beach Dev., No. 11-Y Harbor, Wilming., L. A.	2-	5-13	3,798	sd. sh. drlg.
Long Beach Dev., No. 12-Y Harbor, Wilming., L. A.	2-	5-13	3,015	sd. sh. drlg.
Long Beach Dev., No. 3-W Harbor, Wilming., L. A.	3-	5-13	2,297	sd. sh. drlg.
Long Beach Dev., No. 4-W Harbor, Wilming., L. A.	3-	5-13	3,131	sd. sh. drlg.
Long Beach Dev., No. 11-X Harbor, Wilming., L. A.	2-	5-13	3,873	flow 504 b.d.
Long Beach Dev., No. 7-Z Harbor, Wilming., L. A.	2-	5-13	2,846	flow 426 b.d.
Morgan, Roy, No. 1 Ruth, Wilmington, Los Angeles	35-	4-13	3,214	sd. sh. drlg.
Pacific West. Oil, No. 1 Thiele, Wilmington, L. A.	33-	4-13	2,849	flow 75 b.d.
Royalty Service Corp., No. 3 Packard, Wilm., L. A.	33-	4-13	5,620	sd. sh. drlg.
Royalty Service Corp., No. 1 Fleming, Wilm., L. A.	32-	4-13	3,634	completing
Royalty Service Corp., No. 2-B Santa Fe, Wil., L. A.	33-	4-13	5,713	O.S. drlg.
Signal O. & G., No. 3-S.P., Wilmington, Los Angel.	3-	5-13	4,105	completing
Signal O. & G., No. 4-S.P., Wilmington, Los Angel.	3-	5-13	2,288	sd. sh. drlg.
Union Pacific R. R., No. 117, Wilmington, Los An.	34-	4-13	3,110	O.S. drlg.
Union Pacific R. R., No. 119, Wilmington, Los An.	3-	5-13	2,240	sd. sh. drlg.
Union Pacific R. R., No. 120, Wilmington, Los An.	3-	5-13	2,212	sd. sh. drlg.
Union Pacific R. R., No. 20-E, Wilmington, Los An.	3-	5-13	2,160	sd. sh. drlg.
Kern Oil, No. 24 Monterey, Montebello, Los Angeles	2-	2-12	7,655	completing
Kern Oil, No. 28 Monterey, Montebello, Los Angeles	2-	2-12	6,731	will deepen
Kern Oil, No. 30 Monterey, Montebello, Los Angeles	2-	2-12	7,710	testing
Standard Oil, No. 7 Braun, Montebello, Los Angeles	2-	2-12	7,645	flow 425 b.d.
Standard Oil, No. 8 Braun, Montebello, Los Angeles	3-	2-12	7,660	flow 290 b.d.
Standard Oil, No. 8 Whitehead, Montebello, Los A.	3-	2-12	7,720	sd. sh. drlg.
Union Oil, No. 5 Wilcox, Montebello, Los Angeles	11-	2-12	7,534	cleaning out
Union Oil, No. 7 Wilcox, Montebello, Los Angeles	11-	2-12	7,410	recmtd. 7,410
Union Oil, No. 10 Howard & Smith, Monte., Los A.	11-	2-12	4,652	sd. sh. drlg.
Union Oil No. 7 Paul Howard, Montebello, Los An.	11-	2-12	5,891	sd. sh. drlg.
Albertson Oil, No. 1 Schnakenburg, Monte., Los A.	3-	2-12	7,350	sd. sh. drlg.
Beacon Oil, No. 1 Caneer, Montebello, Los Angeles	11-	2-12	2,266	sd. sh. drlg.
Bush Oil, No. 2 Olds, Montebello, Los Angeles	3-	2-12	7,670	flow 965 b.d.
Bush Oil, No. 1 Zanetti, Montebello, Los Angeles	3-	2-12	3,851	sd. sh. drlg.
B-A Oil Prod., No. 1 H. & S., Montebello, Los Ang.	11-	2-12	7,634	completing
B-A Oil Prod., No. 2 H. & S., Montebello, Los Ang.	11-	2-12	7,484	O.S. drlg.
B-A Oil Prod., No. 1 Ryder, Montebello, Los Angel.	11-	2-12	7,485	O.S. drlg.
Caminol, No. 2-16 Cowan, Montebello, Los Angeles	2-	2-12	3,151	sd. sh. drlg.
C. A. P. Oil, No. 1 Dutch, Montebello, Los Angeles	11-	2-12	4,996	redrlg. 3,090
Crestline Oil, No. 1 Beverly, Montebello, Los Ang.	11-	2-12	3,978	sd. sh. drlg.
Crail Bros., No. 2 Cowan, Montebello, Los Angeles	1-	2-12	2,974	sd. sh. drlg.
Dutch Oil, No. 1 Schelnik, Montebello, Los Angeles	3-	2-12	5,064	sd. sh. drlg.
East Mont. Oil, No. 1 Rissinger, Montebello, Los A.	12-	2-12	6,992	sd. sh. drlg.
East Mont. Oil, No. 2 Rissinger, Montebello, Los A.	12-	2-12	7,591	O.S. drlg.
Fullerton Oil, No. 2 Trustee, Montebello, Los Ang.	12-	2-12	6,996	sd. sh. drlg.
Fullerton Oil, No. 2 Scott, Montebello, Los Angeles	1-	2-12	4,773	sd. sh. drlg.
Graham-Loftus Oil Corp., No. 2 Coffman, M., L. A.	11-	2-12	3,965	sd. sh. drlg.
Hathaway Oil, No. 2 Dore, Montebello, Los Angeles	11-	2-12	6,605	redrlg. 5,960
Larson Drlg., No. 3 Van Deusen, Montebello, L. A.	11-	2-12	2,788	sd. sh. drlg.
Mabee, J. E., No. 36 Monterey, Montebello, Los An.	3-	2-12	6,953	sd. sh. drlg.
McVicar & Rood, No. 4 Manz, Montebello, Los An.	2-	2-12	7,605	O.S. drlg.
McKeon, John, No. 1 Travis, Montebello, Los Ange.	11-	2-12	7,530	O.S. drlg.
Montebello Res. Oil, No. 1 Reservoir, Monte., L. A.	2-	2-12	7,335	redrlg. 6,594
Mono Oil, No. 1 Foreman, Montebello, Los Angeles	2-	2-12	4,975	sd. sh. drlg.
Montebello Oil, No. 1 Nordon, Montebello, Los An.	3-	2-12	3,930	sd. sh. drlg.
Pacific-Amer. Oil, No. 1 Groen, Montebello, Los A.	11-	2-12	4,894	sd. sh. drlg.
Pueblo Oil, No. 1 Bird, Montebello, Los Angeles	11-	2-12	7,657	completing
Pongratz Pet., No. 2 Newmark, Montebello, Los A.	3-	2-12	4,922	sd. sh. drlg.
Sunset Oil, No. 1 Howell, Montebello, Los Angeles	11-	2-12	6,986	sd. sh. drlg.
Star Pet., No. 1 Community, Montebello, Los Ange.	11-	2-12	7,591	sd. sh. drlg.
Texas, No. 1 Wilcox, Montebello, Los Angeles	3-	2-12	5,763	sd. sh. drlg.
Traders Oil, No. 2 Center, Montebello, Los Angeles	2-	2-12	4,455	sd. sh. drlg.
United Mont. Oil, No. 1 Lot, Montebello, Los Ange.	11-	2-12	7,418	sd. sh. drlg.
United Mont. Oil, No. 2 Lot, Montebello, Los Ange.	11-	2-12	5,466	sd. sh. drlg.
United Mont. Oil, No. 3 Lot, Montebello, Los Ange.	11-	2-12	2,974	sd. sh. drlg.
Wood-Callahan Oil, No. 1 Thill, Montebello, Los A.	11-	2-12	4,642	sd. sh. drlg.
York Oil, No. 1 Long, Montebello, Los Angeles	3-	2-12	6,160	sd. sh. drlg.
York Oil, No. 6 Mulholland, Montebello, Los Ange.	2-	2-12	4,587	sd. sh. drlg.
York Oil, No. 1 Lehman, Montebello, Los Angeles	10-	2-12	7,131	sd. sh. drlg.
Kelso. F. W., No. 1 Brea, Puente Hills, Los Angeles	13-	2-10	2,385	sd. sh. drlg.
Hilldon Oil, No. 3 Amebco, Long Beach, Los Ange.	13-	4-13	5,290	sd. sh. drlg.
Dormax Oil, No. 1 Signal, Long Beach, Los Angeles	30-	4-12	7,693	sd. sh. drlg.
Rolling Hills Pet., No. 1 Weston, Palos Verd., L. A.	27-	4-14	6,285	sd. sh. drlg.
Traders Oil, No. 1 Wagner, Richfield, Los Angeles	22-	3- 9	3,650	swabbing
Great Northern Oil, No. 1 Oak, Richfield, Los Ang.	28-	3- 9	922	sd. sh. drlg.
Sonwell Oil, No. 1 Anaheim, East Coyote, Orange	13-	3-10	288	sd. sh. drlg.
Southwest Expl., No. 22 State, Huntington B., Ora.	10-	6-11	4,740	sd. sh. drlg.
Sherin Oil, No. 4 Farnsworth, Huntington B., Oran.	34-	5-11	3,600	P.B. 3,343
Island View Oil, No. 1 Day, Huntington B., Orange	36-	5-11	4,327	pmp. 150 b.d.
Owen, W. D., No. 1 Montgomery, Hunt. B., Orange	36-	5-11	1,187	sd. sh. drlg.

OKLAHOMA

Week Ending September 30

NORTHERN OKLAHOMA

Caddo County

Sinclair Prairie Oil Co. No. 1 Gorman, SW NW NW Sec. 1-16-13w. S. heavy oil; cd. 6,442-49 ft.; Wdfrd. 6,600 ft.; drlg. 6,652 ft.

Canadian County

W. R. Ramsey's No. 1 Mansfield, C NW NE Sec. 16-14-9w. Drlg. 5,985 ft.

Cleveland County

Nels Burton No. 1 Boggs, NE NE SE Sec. 16-9-2w. 2nd Wlx. 7,585 ft.; T.D. 7,646 ft.; P.B. 7,473 ft.; S.D. with 1,700 ft. oil and 1,000 ft. W.I.H.

Nels-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,695 ft.; swbd. 250 B.F. in 24 hrs.; 10% B.S.

Sinclair-Prairie No. 1 Ward, SE SE SE Sec. 30-7-1. Hntn. 6,185 ft.; Vla. 6,408 ft.; open 30 min. at 6,800 ft., rec. S. W.; P.B. to 6,782 ft.; C.O. at 5,400 ft.

Comanche County

Mid Night Oil No. 1 Howe, NW NW NE Sec. 30-2-13w. O.W.D.D.; O.T.D. 703 ft.; drlg. 906 ft.

Creek County

Sunray Oil Co. No. 1 Harris, SW SW NE Sec. 30-14-7. T.D. 2,927 ft.; est. 370,000 cu. ft. gas.

Grady County

Sinclair Prairie's No. 4 Charleston, NE NE SE Sec. 27-5-8w (O.W.D.D.); gas 3,330-50 ft.; T.D. 3,711 ft.; W.O.C.

Grant County

Magnolia Pet. Co.'s No. 1 Margay-Johnson, SW SW NE Sec. 29-25-8w. Drlg. 3,965 ft.

Greer County

C. S. Amos No. 1 Banks, C NW SW Sec. 21-7-22w. Drlg. 1,540 ft.

Jackson County

English Drlg. Co.'s No. 1 Aetna Life, SE SE NE Sec. 26-3-20w. Drlg. 835 ft.

Jefferson County

H. M. Weir No. 1 Carmichael, NE NE SW Sec. 23-7s-7w. Drlg. 3,525 ft.

Kay County

W. C. McBride No. 1-A State, SW NE NE Sec. 13-29-2w. T.D. 3,872 ft.; D. &A.

E. W. Marland No. 1 Crook, SW SW SE Sec. 21-26-3. Drlg. 1,592 ft.

Kingfisher County

Anderson-Prichard No. 1 Geis, C NE SW Sec. 15-18-9w. Lytn. 6,450-6,510 ft.; drlg. 7,540 ft.

Ace Gutowsky No. 1 Lankford, NE NE SE Sec. 34-17-6w. Miss. 7,014 ft.; Woodford 7,531 ft.; Msnr. 7,562 ft.; Wlx. 8,105 ft.; 2nd Wlx. 8,275 ft.; T.D. 8,330 ft.; S.D.O.

Kiowa County

Bollen-Dillard & Roberts No. 1 Holcomb, NE NE SW Sec. 25-7-19w. Drlg. 1,380 ft.

Hagerling et al No. 1 Boseman, SE SE NE Sec. 14-5-18w. Drlg. 1,286 ft.

C. J. Hagerling No. 1 Kimray, SW SW NW Sec. 36-5-18w. Drlg. 1,482 ft.

Lewis & Myers' No. 1 Rhyne, SE SE SE Sec. 29-7-17w. Drlg. 1,097 ft.

Lincoln County

Black Gold No. 1 Locquchment, NE NE NE Sec. 28-14-6. T.D. 3,175 ft.; est. 5 B.O.P.D.; S.D.

R. L. Kemp's No. 1-A Burke, NE SW NE Sec. 20-17-6. Prue 2,864-2,908 ft., T.D.; 1,400 ft. O.I.H.; to shoot.

McIntosh County

W. B. Pine No. 1 Marlin, C N½ SE NE Sec. 14-11-16. Drlg. 2,230 ft.

Scruggs et al's No. 1 Lanning, SE SW SW Sec. 19-12-15. Drlg. 2,625 ft.

Noble County

J. E. Crosbie No. 1 Robbins, SW SW NW Sec. 6-22-2w. S.O. 3,261-64 ft.; Miss. 4,842 ft.; 1st Wlx. 5,176 ft.; 2nd Wlx. 5,254-62 ft., T.D.; D.&A.

Franks & Ellis' No. 1 Stranka, SW SW NW Sec. 35-24-1w. T.D. 1,045 ft.; fighting cave.

Oklahoma County

Hall & Briscoe No. 1 Thompson, SW SW NE Sec. 28-13-1. S.O. 4,803-27 ft.; T.D. 6,058 ft.; W.O.D.P.

Osage County

Midco Oil Co.'s No. 1 Osage, NE NE SW Sec. 17-22-8. Drlg. 2,505 ft.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. Drlg. 3,250 ft.

Payne County

Blackwell O. & G.'s No. 1 Davis, SE SE SE Sec. 24-18-1. Wlx. 4,944-61 ft.; drlg. 4,963 ft.

C. R. Hoagland No. 1 Stanolind, SE SE SW Sec. 27-18-4. Miss. 3,800 ft.; T.D. 3,905 ft.; D.P. stk.

C. F. Newsom's No. 1 Jones, NE NE SW Sec. 15-18-3. Drlg. 2,036 ft.

Pontotoc County

C. C. Marchant's No. 1 Phillips, C W½ SW NE Sec. 8-4-5. S.S.O.; drlg. 1,768 ft.

Smith & Bruson No. 1 Kann, SE SE NE Sec. 13-3-4. T.D. 709 ft.; fsg. 490 ft.

Simpson-Roodhouse's No. 1 McKay, SW SW NE Sec. 1-2-7. C.&P.

Pottawatomie County

E. P. Kerr's No. 1 Harrington, NW NW NW Sec. 24-9-4. R.U.S.T. 4,535 ft.

Neustadt et al No. 1 Howeth, NE SE NE Sec. 14-6-4. Sd. and S.S.O. 3,455-60 ft.; S.D. 5,060 ft.

Seminole County

Sands Pet.. Co.'s No. 1 Misselda, NW NW SE Sec. 13-7-5. Cd. 3,120-34 ft.; recvd. 12 ft. sh.

Sequoyah County

Thompson Bros. No. 1 Ruby, NW NW NE Sec. 30-12-22. Hntn. 1,451 ft.; T.D. 1,912 ft. (cor.); S.D.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. T.D. 14,479 ft.; cmtd. off fish; to set whpstk. and drill by.

SOUTHERN OKLAHOMA

Choctaw County

Letchfield & Kirksly No. 1 Schuester, SW SE SW Sec. 13-6s-14. Cd. 1,169-81 ft., L.&sd.; to core ahead.

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. T.D. 1,634 ft.; W.O.C.

Cotton County

Dean Bros.' No. 1 Emery, NE NE NE Sec. 30-3s-13w. T.D. 2,503 ft.; D.&A.

Jefferson County

Fred Land et al's No. 1 Barrett, NE SE SE Sec. 14-6s-6w. Sd. 1,852 ft., S.O.; D. P. stk. at 1,100 ft.; T.D. 1,890 ft.

Love County

Neff et al's No. 1 Brahms, NW NW SW Sec. 35-6s-2e. S.S.O. 1,555-90 ft.; drlg. 1,760 ft.

Marshall County

Hughes et al No. 1 Vittitto, C NE SE Sec. 11-5s-4e. O.W.D.D.; O.T.D. 7,100 ft.; T.D. 7,110 ft.; S.D.

Johnson et al No. 1 Godfrey, SW SE NE Sec. 14-6s-6e. Drlg. 2,167 ft.

KANSAS

Week Ending September 30 (Descriptions are East unless marked otherwise)

Barton County

Aylward Prod. et al's No. 1 Harzman, C W½ NW SW Sec. 33-16s-11w. R. U.R.

W. H. Brinn No. 1 Dirks, CWL SW NE Sec. 31-18-15w. Lans. 3,280 ft.; pay 3,581 ft.; T.D. 3,585 ft.; p. 54 B.O. in 8 hrs.; pot. 163 B.O.; comp.

Broderick & Gordon's No. 1 Kowalsky, C E½ SE NE Sec. 30-20-11w. Drlg. 2,846 ft.

Crown Pet. Co. No. 1 Marchand, NE SE NW Sec. 13-20-11w. Drlg. 2,910 ft.

Seaney & Clampitt's No. 1 Schauf, CSL E½ SW Sec. 1-16-12w. Sur. hole.

Butler County

Carey & Jennings No. 1 Kelly, C SW Sec. 20-27-4. S.D. 2,660 ft.

Cromwell & Lewis No. 1 Stern, NW NW NW Sec. 27-27-6e. M.I.M.

Marylyn Oil et al No. 1-A Hoard, SW NE NE Sec. 28-29-8. Drlg. 1,575 ft.

Simpson & Noble et al's No. 1 Marsh, NW NW SW Sec. 23-28-6. Miss. 2,810 ft.; S.O.; H.F.W. 3,251 ft., T.D.; S.D.O.

Coffey County

Hollett's No. 1 Butler, SE SW SE Sec. 28-20-15. Drlg. 675 ft.

Sackrider et al No. 1 Allen, SE NE SE Sec. 13-21-15. Miss. 1,885 ft.; Wlx. 1,920 ft.; T.D. 2,222 ft., sd.; D.&A.

Cowley County

Garden's No. 1 Rahn, SW SW NW Sec. 13-34-5. Drlg. 2,030 ft.

J. R. Lowell et al No. 1 Olsen, NE NE SE Sec. 13-35-7. S.S.O. 2,834-38 ft.; T.D. 3,241 ft.; 2,500 ft. W.I.H.; D.&A.

E. B. Shawyer's No. 1 Henderson, C W½ NE NE Sec. 4-33-6. Drlg. 430 ft.

Dickinson County

Franks et al No. 1 Huffman, NW NW SW Sec. 11-13-1. Hntn. 2,807 ft.; Vla. 3,048-55 ft.; S.S.O. 3,156-65 ft.; C.O. 3,170 ft.

Douglas County

Greenway Oil Co.'s No. 1 Grosdedier, C E½ SE NE Sec. 24-13-20. Rng. csg. 415 ft.

Franklin County

Security O. & G. Co. No. 1 Teall, C SW NW Sec. 11-17-17. Rng. 8-in. 1,050 ft.

Greenwood County

Chas. Barker's No. 1 Gregg, SW NW SE Sec. 35-25-12. (O.W.D.D.). O.T.D. 1,660 ft.; drlg. 1,955 ft.

A. A. Hinze et al's No. 1 Hester, NW SW NE Sec. 1-22-12. S.D. 510 ft.

Jefferson County

Continental Oil's No. 1 Berridge, NW NW SW Sec. 8-9-17. Miss. 2,040 ft.; drlg. 2,045 ft.

C. L. Sheedy et al's No. 1 O'Neill, SE SW NW Sec. 34-8-19. Drlg. 1,594 ft.

Kingman County

Skelly Oil Co. No. 1 Miller, CSL N½ NE Sec. 31-27-10w. Set 7-in. 4,067 ft.; R.U. S.T.

Lyon County

Bruce's No. 1-A fee, NW NW NW Sec. 13-18-10. Drlg. 2,200 ft.

McPherson County

H. C. Bennett No. 1 Peterson, CSL NW NW Sec. 32-20-5w. T.D. 3,365 ft.; S. 156 B.O. in 6 hrs.

Montgomery County

Lerke & Whortan No. 1 Clemmer, C SW SW Sec. 21-32-15. Arb. 1,530 ft.; set 5-in. csg.; W.O.C.

Osage County

J. M. Edwards No. 1 Detrick (Q.W.D.D.), C NW SE Sec. 21-14-15. O.T.D. 1,200 ft.; S.G. in sh. 1,618-24 ft.; S.D. 1,650 ft.

Pratt County

Skelly Oil Co. No. 1 Royse, C SW Sec. 9-28-11w. Lans. 3,604 ft.; Vla. 4,246-49 ft.; T.D. 4,268 ft.; S.S.O.; 802,000 cu. ft. gas.

Rice County

Fred Jones et al No. 1 Benhke, NW SW NW Sec. 25-18-10w. Drlg. 2,062 ft.

Phoenix Drlg. No. 1 Linville, SW SW SE Sec. 4-20-10w. Simp. 3,375 ft.; Arb. 3,388 ft.; H.F.W. 3,396 ft.; S.D. 3,400 ft.

Saco Oil's No. 1 Habeger, SE SE SW Sec. 12-18-10w. Drlg.

Vickers Pet. Co. No. 1-A Rodenberg, CNL NW¼ Sec. 8-18-10w. Lans. 2,930 ft.; Arb. 3,265-81 ft., T.D. N.S.

Rooks County

Broadview Oil No. 1 Baxter, NE SW SW Sec. 35-8-16w. Lans. 3,180 ft.; S.S.O.; T.D. 3,263 ft.; P. 89 B.O. in 7 hrs.; pot. 269 B.O.P.D.

Saline County

Jess Cling et al's No. 1 Erickson (O.W. D.D.), NE NE NE Sec. 28-16-3w. O.T. D. 1,800 ft.; Vla. 3,330-75 ft., T.D.; N.S.; D.&A.

Sedgwick County

Cameron & Spencer No. 1 Fields, NE NE NW Sec. 4-28-2. K.C. 2,516 ft.; Miss. 2,980 ft.; H.F.W. 3,007 ft.; S.D.

Parks et al's No. 1 Fisher, NW NW NE Sec. 25-26-1. Miss. 3,029-46 ft., T.D.; H.F.W.; D.&A.

Stafford County

Continental Oil Co. No. 1 Keller, SE SE SE Sec. 15-24-13w. S.O. 3,733-43 ft., cd. 4,111-16 ft. and rec. 5 ft. sat.; T.D 4,116 ft.; 3,900 ft. O.I.H.

Woodson County

Bird, Hanley & Sheedy No. 1 Pingrey, C S½ SE Sec. 22-25-15. Spd.

MISSOURI

Adair County

Etting et al's No. 1 Clark, NW NE SE Sec. 8-63-14w. S.D. 180 ft.

Mason Oil Co. No. 1 McGonigle, CNL SE NW Sec. 20-63-13w. S.O. 1,002-73 ft., 1,116-63 ft.; St. Peter 1,238 ft.; Arb. 1,431 ft.; pulled 5-in. and P.B. to 1,200 ft.; perf.; H.F.W.; acd.; swbd. all wtr.; to P.B. and perf. higher.

Andrew County

Davis Bros. et al No. 1 Gee, NW NW SE Sec. 28-60n-35w. S.O. in Bart. 995 ft.; S.O. 2,065-75 ft.; drlg. 2,090 ft.

Bates County

Monarch Roy.'s No. 1 Lee, C SW SE Sec. 11-39-30w. S.O. 834-36 ft.; T.D. 1,-934 ft.; S.D.

Bollinger County

Delmund Oil No. 1 Cooper, SE SE SE Sec. 14-29-9e. Drlg. 1,780 ft.

Buchanan County

Miller et al's No. 1 Carrough, C SE SE Sec. 24-57-35w. T.D. 95 ft.

Butler County

Coastal Pet. et al No. 1 Pierson, SW NE NW Sec. 27-22-6e. S.D. 149 ft. (cor.)

Charlton County

L. E. Mummert et al's No. 1 Rickert, NW NE SE Sec. 26-54-20w. Loc.

Clay County

Pabelo Dev. Co.'s No. 1 Bartlett, SE NW NE Sec. 34-52-32w. Drlg. 520 ft.

Pabelo Dev. Co.'s No. 5-A Robb, NW NW SE Sec. 36-52-32. T.D. 600 ft., S.G.; S.D.O.

Clinton County

C. E. King et al's No. 1 Vanderau, SE NE SW Sec. 18-55-31w. Drlg. 780 ft.

Daviess County

H. H. Francis' No. 1 Louis, SW NW SW Sec. 29-59-27w. S.D. cable 330 ft.

DeKalb County

Geo. W. Moore No. 1 McQuate, NE SW SW Sec. 11-57n-31w. Miss. 1,075 ft.; S.D. csg. 1,500 ft.

Harrison County

H. V. Elwell et al's No. 1 Maple, NE SW SE Sec. 3-62-26w. Drlg. 1,727 ft.

Holt County

Brin & Nathan No. 1 Decker, C NW NW Sec. 1-61-38w. Drlg. below 793 ft.

Markham et al No. 1 Gaffney, SW SE SW Sec. 24-63-40w. Spd. and S.D.

Jackson County

Hulse & Christopher's No. 1 Wiston, NE NW SE Sec. 22-49-32w. S.D. 510 ft. to D.D.

Knox County

W. H. Oberithier et al's No. 1 Campbell, C NE Sec. 18-61-12w. C.&P.

Livingston County

Davis Bros. No. 1 Minning, SE SE NW Sec. 22-58-23w. Hntn. 783 ft.; T.D. 965 ft., S.D.

J. E. Linton's No. 1 Chillicothe, C S½ NE SE Sec. 15-56-23w. Loc. abd.

Mercer County

Geo. W. Moore No. 1 Moss, NW SW SE Sec. 30-65-24w. Hntn. 1,273 ft.; T.D. 1,869 ft.; fsg. 6-in.

Platte County

Missouri Valley G. & O.'s No. 1 Herrington, C SE NE Sec. 12-51-34w. Spd. 50 ft.

Putnam County

Morrow et al's No. 1 Cooley, SE SE NW Sec. 33-64-17w. T.D. 885 ft.; rng. csg. to test.

Randolph County

A. A. Ash et al's No. 1 Alexander, C SE Sec. 14-55-13w. Loc.

Ray County

Loomis-Jordan No. 1 Macey, NE SW NW Sec. 10-53-27w. S.O. 330 ft., T.D.; set csg.

Schuyler County

T. E. Baldwin No. 1 May Johnson, NW NE NE Sec. 21-65-15w. S.D. 322 ft.

Shelby County

Wright & Turner No. 1 Turner, C NW NW Sec. 27-59n-9w (wildcat). S.D. 650 ft.

St. Charles County

Brooks et al's No. 1 Stewart, SE SE SE Sec. 4-46-2e. Drlg. 350 ft.

Lafayette County

East Texas Ref. Co. et al's No. 1-B Bell, C N½ SE NW Sec. 19-16-23. T.D. 3,-605 ft.; set 5½-in. csg. 3,439 ft.; S.W. 3,470 ft.; P.B. 3,440 ft.; perf. csg. 2,-305-12 ft.; T. Tokio 2,307 ft.; swbd. and flwd. 17-gr. oil; P.B. 2,320 ft. and set pkr. 2,314 ft.; tstg. 2,320 ft.

Standard Oil Co. of La.'s No. 1 Allen Foster, 570 ft. N, 650 ft. E, SW cor. NW SW Sec. 7-16-22. Set 9⅝-in. csg. 2,073 ft.; drlg. 6,377 ft.

Little River County

C. & M. Drlg. Co.'s No. 1 Strawn, NW cor. SE SW Sec. 17-10-32. Recmtd. csg. 1,590 ft.; tstd. S.W.; S.O. 1,763-70 ft.; T.D. 1,810 ft.; W.O.C.

Lonoke County

Cabot Drlg. Club, Inc., No. 1 Benson townsite, Sec. 18-4n-9w. Reported S.O. 1,400-50 ft.; hole clean; ran survey to 2,573 ft.; P.B. 1,470 ft.; set 4⅞-in. csg. 1,390 ft.; reset 4⅞-in. csg. 1,540 ft.; P.B. to test sd. 1,950 ft.; shot with 40 qt. nitro and bailed dry; pulled 4⅞-in. csg. and shot with 46 qt. nitro 1,390-1,440 ft.; S.S.G.&S.W.; set 6-in. csg.; rerng. 4⅞-in. csg. to test 1,453 ft.

J. F. Russell's No. 1 J. T. Gunter, 440 ft. N, 577 ft. W, SE cor. Sec. 17-5n-10w. Reported S.O. 1,384 ft. and 2,111 ft.; W.O. 2,111 ft.

W. L. Tedford No. 1 Anderson, Sec. 7 4n-9w. Set 6¼-in. csg. 1,025 ft.; re-seating 6-in. csg. to S.O.W. 1,125 ft.; U.R. 6¼-in. csg. 1,175 ft.; reported S. O. 940 ft.; S.D. 1,198 ft.; engine rep.

Miller County

W. C. Feazel's No. 1 Norton, 454 ft. N. 350 ft. W, SE cor. Sec. 18-20-27. R.U.

Ouachita County

Lion Oil Ref. Co. No. 1 B. Annie, SE NE Sec. 29-15-17. D.S.T. 5,656-66 ft.; 13 min.; rec. 35 ft. drlg. fluid and S. S.O.; 7-in. csg. 5,641 ft.; U.R. 5,641-56 ft.; bailed down 4,700 ft.; P.B. rathole 5,660 ft.; P.B. 5,658 ft.; acd. with 3,-500 gal.; swbd. est. 10 B.P.H., 90% S.W.; S.D.; rig repair; T.D. hd. dense L., 5,827 ft.

Harry Steffen's No. 2 F. A. Laney, Sec. 36-15-16. Stk. 5-¼-in. 2,777 ft.; set 966 ft. at 2,777 ft.; T.D. 2,832 ft.; shot with nitro 2,575-78 ft.; pmpd. est. 50 B.F.P. D.; S.S.O.; O.T.D. 2,832 ft.; rpd. csg. 2,-570-78 ft.; rpd. csg. 2,306-10 ft.; pmpd. est. 600 bbl. S.W. per day; perf. csg. 1,990-2,020 ft.; W.O. 2,832 ft.

A. B. Turner et al No. 1 Cook Est., C NW SW Sec. 27-15-18. 10-in. 210 ft.; T. Nacth. 1,588 ft.; D.S.T. 1,588-1,613 ft.; 2½ min.; ½-in. cks. T.&B.; est. 25,000,000 cu. ft. gas daily; R.P. 500 lb.; D.S.T. 1,614-18 ft.; 10 min.; rec. 500 ft. oil, 17-gr. and 200 ft. S.W.; W. O. 1,618 ft.

Pulaski County

Coker Oil Corp.'s No. 1 Huffman, 330 ft. NW cor. NW SW SW Sec. 29-4n-11w. 8⅝-in. csg. 206 ft.; S.D. 1,763 ft.

Sevier County

R. A. McArthur's No. 1 Bell est., 20 ft. SE cor. SE SW Sec. 29-9s-32w. Set 12½-in. csg. 100 ft.; W.O.C.

Union County—Schuler

Lion Oil Ref. Co.'s No. 2 Calloway, 330 ft. SE cor. SE SE Sec. 13-18-18. Drlg. sdy. sh. 6,220 ft.

Lion Oil Ref. Co.'s No. 7-B Morgan, 330 ft. NW cor. W½ SE Sec. 18-18-17. Drlg. 1,430 ft.

Marine Oil Co.'s No. 5 Justiss, 300 ft. N, 465 ft. W, SE cor., Lot 7, NW Sec. 18-18-17. R.U.

Union County—Other

Arkansas Southern Oil Corp. No. 3-A Simmons, NW cor. NE NW Sec. 15-18-13. Set 4-in. csg. 2,510 ft.; W.O.C.

E. G. Bradham's No. 4-A H. C. McKinney, 306 ft. N, 660 ft. E, SW cor. SW SW Sec. 30-17-15. Hole 120° off; prep. P.B. 2,150 ft.

Crestrock Oil Co.'s No. 1 E. Riley, 330 ft. S, 250 ft. W, NE cor. NW SW Sec. 9-16-15. S.O. 2,370-80 ft. and 2,-390-2,400 ft.; 6-in. csg. 2,415 ft.; T.D. 2,415 ft.; perf. 2,370-74 ft.; pmpd. est. 200 B.P.D.; small S.O.; W.O. 2,415 ft.

Delta Drlg. Co.'s No. 1 C. T. Grace, C SE SE Sec. 31-12-14. R.U.

H. L. Halverson No. 1 Moore, C SE SE Sec. 1-17s-14w. S.D. 2,225 ft.; rig rep.

Lion Oil Ref. Co. No. 9-A Hays, Sec. 4-16-15. O.W.W.O.; O.T.D. 7,255 ft.; P.B. 2,325 ft.; rpd. csg. 2,276-80 ft.; S.O.; pmpd. est. 700 B.P.D. S.W.; S.S.O.; srng. recmt. 2,325 ft.; W.O.C.

Jo-Mo Oil Corp.'s No. 1 Union Sawmill Co., 330 ft. N and W, SE cor. NE NE Sec. 24-17-14. Set 10-in. 74 ft.; T. Nach. 2,310 ft.; srng. core 2,626 ft.

MISSISSIPPI

Claiborne County

Claiborne Co. Dev. Co. No. 1 Ruth Hayden, S½ SE Sec. 55-11n-2e. O.W.WO.; O.T.D. 2,949 ft.; S.D. 3,272 ft., sh.

Copiah County

Triangle Drlg. Co.'s No. 1 W. W. Broome, 153 ft. SW cor. SW SE Sec. 1-10n-8e. T.D. 10 ft.; comp. R.U.

Kemper County

M. R. Crabb et al's No. 1 W. T. Caldwell, NW SE Sec. 25-9n-15w. T.D. 1,140 ft.; 10¾-in. csg. 86 ft.

Lafayette County

Adam O. & G. Co. No. 1 Z. E. Lewellen, 990 ft. WL, 330 ft. NL, NE NW NW Sec. 9-10s-1w. Drlg. chert 3,511 ft.

Prentiss County

Home Dev. Co.'s No. 1 Mrs. A. Allen, Sec. 8-7s-9e. Drlg. chert 1,125 ft.

Simpson County

Cleve Love No. 1 N. E. Gardner, SW cor. SW NE Sec. 1-10n-17w. S.D. 3,150 ft., Wlx.

Yazoo County

O'Brien Bros. et al's No. 1 Jennie Stevens, C SW NE Sec. 13-10n-3w. R.U.

Union Prod. Co.'s No. 1 S. E. Perry et al, C NW NW Sec. 24-10-3. Rng. 10-in. csg. 1,550 ft.

Union Prod. Co.'s No. 1 Stevens, C NW NW Sec. 13-10-3. Set 10-in. csg. 1,550 ft.; W.O.C.

ARKANSAS

Clark County

W. S. King's No. 1 H. Ross, 640 ft. S, 359 ft. W, NE cor. S½ SW Sec. 3-10-21. Fsg. slip. hd. sh. 1,460 ft.

W. P. Wilson's No. 1 Hamilton & Mathews, C W½ NE NE Sec. 31-10s-20w. Run 10-in. csg. 41 ft.; T. Nac. 358 ft.; S.S.O.; reported S.O.&G. 437 ft.; S.D. 1,125 ft.

Columbia County

Ark. Fuel Oil Co.'s No. 1 King, C SE SW Sec. 16-17-20. M.I. rig.

Lion Oil Ref. Co.'s No. 1 Warnock est., C NW NW Sec. 15-18-22. R.U.

McAlester Fuel Co.'s No. 1 E. D. Harris et al, C SW NW Sec. 14-17-19. S.O. cuttings 4,590-4,600 ft.; drlg. sd.&sh. 6,630 ft.

Normandie Oil Co.'s No. 2 Dees, C SE SE Sec. 24-17-20. Drlg. 3,171 ft.

Shell Oil Co., Inc.'s No. 1 W. F. Merritt, C NE SW Sec. 15-17-20. 13⅜-in. csg. 133 ft.; 9⅝-in. csg. 2,187 ft.; T.D. 7,610 ft.; rng. csg.

Southwood Oil Co.'s No. 1-C A. L. Poindexter, C N½ SW SE Sec. 23-17-20. Drlg. gr. sh. 4,400 ft.

Standard Oil No. 1 J. A. Foster, Sec. 19-17s-19w. Set 6-in. csg. 7,453 ft.; set 370 ft. of 4¾-in. at 7,594 ft.; set whpk. 4,340 ft.

Standard Oil Co. of La.'s No. 1 Gunnels, 660 ft. SW cor. SE NW Sec. 19-17-19. Drlg. 5,514 ft.

Standard Oil Co. of La.'s No. 1 D. H. Lewis, C NW NE Sec. 19-17-19. Drlg. 4,325 ft.

Tide Water Seaboard's No. 1 Clark, C SE NE Sec. 16-18-19. Drlg. 1,656 ft.

G. H. Vaughn and Deep Rock Oil Corp.'s No. 1 J. Jones unit, C SW NE Sec. 21-17-20. S.D. 3,250 ft.; W.O.

Craighead County

Tennark, Inc., No. 1 R. M. Martin, SE cor. NE NE Sec. 35-14-3e. Drlg. sdy. L. 3,-462 ft.; T. sdy. L. 3,458 ft.; S.G.

Faulkner County

Cato Oil Co., Inc.'s No. 1 R. R. Harrell, 330 ft. SE cor. SE SW Sec. 35-4n-12w. Set 10-in. csg. 210 ft.; 7-in. csg. 2,260 ft.; sd. 2,367-70 ft.; flwd. est. 40,000 cu. ft. gas daily; S.I.C.P. 50 lb.; T.D. 2,496 ft.; S.D.; bd. bl. limy sh.; est. 1,000 ft. wtr. in hole; S.I.; G.P. 50 lb.

Howard County

Wm. James No. 1 I. M. Brooks, 115 ft. W, 462 ft. N, SE cor. NW NW Sec. 2-8s-27w. Pulled 10¾-in. csg.; rmd. to bttm.; drld. to 350 ft. and abd.; jnkd.; skidded 15 ft. south and began new hole.

Joe Rogers et al No. 1 Dierks Lbr. Co., C SW SW Sec. 7-8s-28w. R.U.C.T.

Independence County

C. P. Daniels' No. 1 Kelly Wyatt, 1,085 ft. S, 50 ft. E. NW cor. SE Sec. 18-12n-5w. T. gas sd. 598 ft.; 8¼-in. csg. 597 ft.; S.G. sd. 603 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bossier Parish

Gulf Ref. Co.'s No. 20 C. B. Hodges, 3,-131 ft. N, 1,388 ft. W, SE cor. Sec. 24-16-12. Cd. ool. L. 4,411-23 ft. S.G. and dist.; tried to blow out; D.S.T. 4,-400-25 ft.; rec. 4,000,000 cu. ft. gas and spray S.W. and some heavy oil in 20 min.; cmtd. off bttm. of hole 4,430 ft.; drlg. ahead.

Caddo Parish

Ark. La. Gas Co.'s No. 1 Bell, 1,213 ft. N, 1,067 ft. E, SW cor. Sec. 6-17-16. R.U.

J. W. Bailey's No. 1 Winston, 592 ft. N, 150 ft. E, SW cor. NW Sec. 8-20-15. Set 10-in. csg. 110 ft.; 6-in. csg. 1,344 ft.; W.O.C.

Burton & Harlan's No. 1 Huckaby, 689 ft. S, 40 ft. W, NE cor. NW SE Sec. 1-20-16. Set 6⅝-in. csg. 1,323 ft.; used 3,000 gal. acd.; W.O.S.R. 1,560 ft.

Paul Cooper's No. 7 Stiles, Sec. 33-21-16. O.W.D.D.; O.T.D. 1,850 ft.; W.O.S.R. 1,870 ft.

L. I. Davis' No. 1 Williams, C NW NW Sec. 14-15-15. R.U.

East Texas Ref. Co.'s No. 1 Ewing Atkins, C NW NE Sec. 8-23-15. Set 5-in. csg. 6,092 ft.; T.D. 6,140 ft.

R. L. Hall's No. 2 Caddo Lv. Bd., 585 ft. S, 1,245 ft. E, C Sec. 26-21-16. Set 8-in. csg. 961 ft.

Hamilton & Stone No. 1 Atlanta, 500 ft. S. 244 ft. W, NE cor. NW Sec. 2-20-16. Set 6-in. csg. 1,701 ft.; T.D. 2,301 ft.; W.O.S.R.

A. R. Hancock's No. 1 Standard Oil Co. fee, 330 ft. NW cor. SW Sec. 17-21-15. Set 7-in. csg. 1,527 ft.; W.O.C.

V. A. Hardin's No. 1 Glassell-Means, 660 ft. S, 609 ft. E, NW cor. Sec. 9-23-15. Fsg. D.S. 1,569 ft.

Jones Oil Co.'s No. 1 Pitts, 250 ft. S, 674 ft. W, NE cor. Sec. 24-20-16. Tstg. 1,679 ft.

McDonald Oil Co.'s No. 1 G. W. Thacker, 324 ft. S, 347 ft. E, C Sec. 1-20-16. Drlg. sd. 1,250 ft.

J. F. Mechen's No. 1 Crystal, 990 ft. S, 900 ft. W, NE cor. Sec. 14-21-16. S.D. 1,550 ft.

J. Ray Murray et al's No. 1 Standard Oil Co. fee, 330 ft. N, 200 ft. E, SW cor. Sec. 12-21-16. Set 7-in. csg. 1,500 ft.; T.D. 1,720 ft.; W.O.C.

J. S. Pate's No. 1 J. B. Files, 330 ft. N, 332 ft. W, SE cor. Sec. 7-21-15. 6⅝-in. csg. 1,530 ft.; W.O.C.

Prairie River Synd. No. 2-B Hutchison, 4,055 ft. N, 480 ft. E, SW cor. Sec. 3-15-12. Set 13⅜-in. 735 ft.; 4,545-54 ft. S.S.G.; fairly por. ool. L.; good odor gas; T. Tr. Pk. 5,740 ft.; ran elec. sur.; T.D. 6,010 ft.; W.O.

Seymour Oil Co. No. 1 Hughes et al, 330 ft. NE cor. NW Sec. 15-20-15. W.O. S.R.; set 6-in. csg. 2,190 ft.; T.D. 2,-206 ft.

Skidmore-O'Mara, Inc.'s No. 1 Muslow, O.W.W.O., 4,150 ft. N, 579 ft. W, SE cor. SW Sec. 31-21-15. D.S.T. 1,572 ft., dry; drlg. sh. 1,863 ft.

Stanolind O. & G. Co. No. 1, 131 Dillon hrs., C SE NE Sec. 14-21-15. Drlg. sh. 8,447 ft.

Joe G. Strahan's No. 2 Stiles, 1,958 ft. N, 250 ft. E, SW cor. Sec. 29-21-16. Drlg. sh. 120 ft.

Texas Co.'s No. 18-B Noel, 330 ft. NW cor. Sec. 14-21-15. Set 6⅝-in. csg. 1,-523 ft.; W.O.C. 1,564 ft.

Waldron & Barnes' No. 2 Ark. Fuel Oil Co., 483 ft. N, 630 ft. E, SW cor. NW SE Sec. 1-20-16. Drlg. sd. 350 ft.

Caldwell Parish

Ark. Fuel Oil Co. No. 1 La. Central Lbr. Co., C NW SW Sec. 31-12-3e. T. Wlx. 1,516 ft.; 9⅝-in. csg. 1,732 ft.; drlg. 7,-327 ft.

Critchett & Woods, (formerly E. T. Oakes) No. 1 Kyles, NE cor. SW NE Sec. 18-11-3e. S.D. 4,120 ft.

Catahoula Parish

Bell Drlg. Co. No. 1 Peck, C SW NE Sec. 33-11n-8e. Set 41 ft. 15½-in. csg.; 50 ft.; W.O.C.

Claiborne Parish

Lisbon Explin. Co. No. 1 Roberta Vaughn, 330 ft. N, 660 ft. E. SW cor. NW NE Sec. 36-21-5. O.W.D.D.; O.T.D. 5,313 ft.; recmtd. 7-in. csg. 5,343 ft.; T. Tr. Pk. 5,405 ft.; drlg. hd. sd. 7,-712 ft.

Maritsky & Bibby's No. 4 McClung, Sec. 29-21-7. Tstg.; T.D. 1,476 ft.

De Soto Parish

Murray Davis' No. 1 Russell, 50 ft. N, 500 ft. W. SE cor. NE NW Sec. 12-11-16; O.W.D.D.; O.T.D. 2,046 ft.; T.D. 2,515 ft.; tstd. S.W.; P.B. 1,700 ft.; tstd. small S.G.; T.D. 2,736 ft.; reported 4-ft. oil sd.; S.D.

Roosth & Genecov Prod. Co. No. 1 Woolums, 990 ft. S, 330 ft. E NW cor. SW¼ Sec. 29-12-12. T. Nac. sd. 1,038 ft.; reported S.O. 1,038-64 ft.; P.B. 1,-048 ft.; 7-in. 1,038 ft.; tstd. dry; S.D.; W.O. 1,064 ft.

C. H. Tuttle No. 2-A Wemple, E NW cor. SW¼ Sec. 14-12n-11w. T. bkn. sd. 2,640 ft.; 6⅝-in. csg. 2,557 ft.; T.D. 2,698 ft.; tstg.

Watts Oil & Gas Co. No. 1 Frank Grocery Co., 386 ft. S, 450 ft. W NE cor., NW Sec. 35-12-11. S.D. 1,300 ft.

Grant Parish

Arrow Drlg. Co.'s No. 1 Maxwell, 330 ft. S, 810 ft. W, C Sec. 9-9-1e. T. sd. 1,534 ft.; 6-in. csg. 1,530 ft.; W.O.C.; T.D. 1,537 ft.; tstg.

La Salle Parish

Smith Bros.' No. 1 Kenney, 660 ft. S, 150 ft. W, C Sec. 7-10-2e. T.D. 1,510 ft.; S.D.; wtr.

Morehouse Parish

Union Prod. Co. No. 1-A Tensas-Delta, 1,894 ft. W, 1,584 ft. S, NE cor. SE Sec. 8-22-4. Set 20-in. csg. 125 ft.; 16-in. csg. 712 ft.; set 10¾-in. csg. 2,448 ft.; T.D. 7,276 ft.; sd. or L. 7,269-76 ft.; reported S.O. or G.; D.S.T. 7,270-76 ft.; 16½ stands S.W. in 20 min.

Natchitoches Parish

Jack Lent et al's No. 1 Walker, C NE NE Sec. 9-10-10. 10-in. csg. 63 ft.; S.D. 720 ft.

Popkins & DeSoto Bros.' No. 1 Peavy-Wilson Lbr. Co., 330 ft. NW cor. SE NW Sec. 36-7n-9w. O.W.W.O.; O.T.D. 500 ft.; drlg. sh.&rk. 2,110 ft.

Sabine Parish

A. R. Chestnut et al's No. 1 Sepulvedo, 990 ft. N, 330 ft. E, SW cor. Sec. 4-7-13. 10-in. csg. 60 ft.; W.O.C.

Hunter Co.'s No. 1-B Sabine, 660 ft. NE cor. NW NW Sec. 17-7-13. T. mari 2,-123 ft.; set 6-in. csg. 2,124 ft.; tstg. 2,575 ft.

Major Oil Co. No. 7 Bowman Hicks, 330 ft. NW cor. NE SE Sec. 11-7-13. T. clk. 2,139 ft.; set 7-in. csg. 2,143 ft.; treated with 1,500 gal. acd. at 2,420 ft.; S.O.; reacd.; 2,500 gal.; tstd. 5 B. P.D., oil; cd. S.W. sd. 2,571 ft.; T.D. 2,572 ft.; W.O.

Oglesby & Baird's No. 1 Sabine Lbr. Co., SW cor. SW SE Sec. 5-7-13. T. clk. 2,-140 ft.; rng. csg.; T.D. 2,140 ft.

Okla.-Texas Tr.'s No. 3 Frost Lbr. Co., NE cor. NE SW Sec. 22-9-13. Sd.; S.O. 2,027-29 ft.; tstd. small S.O.; set 6⅝-in. csg. 3,031 ft.; tstd. S.G. 3,031 ft.; drld. to 3,041 ft.; S.I.

K. R. Phillips' No. 1 Craig, 335 ft. S, 330 ft. E, NW cor. NW SE Sec. 22-9-13. D.D.; S.D. 1,872 ft.; rep. rig.

W. L. Posey No. 1 Rivera, C NW NW Sec. 26-8-13. 6-in. csg. 2,147 ft.; T.D. 2,150 ft.; T. clk. 2,145 ft.; set 6-in. 2,-147 ft.; W.O.C.

W. M Quick No. 1 Sabine, SE cor. NE SE Sec. 8-7-13. 6-in. csg. 2,061 ft.; T. D. 3,547 ft.; P.B. 2,350 ft.; tstg.

R. M. Sneed No. 1 Leone, SW cor. NW SE Sec. 8-7-13. T.D. 1,962 ft.; 6-in. csg. 2,061 ft.; W.O.S.R.; T.D. 2,116 ft.

S. E. Stack's No. 1 Gray, 330 ft. SW cor. Sec. 4-7-13. T. clk. 2,025 ft.; set 7-in. csg. 2,028 ft.; W.O.C.

Webster Parish

Geo. B. Barham's No. 1 Bodcaw Lbr. Co., 627 ft. N, 710 ft. E, SW cor. SE Sec. 15-21-10. O.W.D.D.; O.T.D. 4,683 ft.; drlg. sh.&L. 5,576 ft.

Hunt Oil Co. No. 1 Glass et al, C SE NW Sec. 30-21-9. Set 9⅝-in. csg. 5,665 ft.; D sd. 8,469-83 ft. (oil); Bdcw. sd. 8,-562-8,602 ft. (bttm. 8 ft. oil); Davis sd. 8,853-59 ft. (gas); drlg. ahead.

Midstates Oil Corp.'s No. 1 W. L. Coyle, 100 ft. NW, C NE SE Sec. 20-21-10. Drlg. sd.&sh. 7,655 ft.

Oliphant Oil Co.'s No. 2 Banks, 410 ft. S, 660 ft. E. NW cor. Sec. 2-20-10. Set surf. csg.; W.O.C.

Stanolind O. & G. Co. No. 3 Pardee, C SW SE Sec. 35-21-10. T. Cot. Val. 8,-030 ft.; D sd. 8,446-70 ft. (oil); cg. 8,-586 ft.

Stanolind O. & G. Co.'s No. 4 Pardee, 660 ft. SE cor. Sec. 25-21-10. T. Tr. Pk. 5,829 ft.; 9⅝-in. csg. 5,950 ft.; drlg. ahead.

Woodley Pet. Co.'s No. 2 Couch, 810 ft. S, 510 ft. W, NE cor. SW Sec. 35-21-10. 13⅜-in. csg. 683 ft.; drlg. anhy. 4,845 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 3 Brookshire, Sec. 66-12s-3e. Drlg. sh. 6,460 ft.

Continental Oil Co. No. 1 David Meaux, Sec. 9-12s-3e. T.D. 11,359 ft.; T. gas sd. 11,318 ft.; D.S. stk.; fsg.

Continental Oil Co. No. 1 Franciel, Sec. 67-12s-3e. Drk.

Stanolind O. & G. Co.'s No. 1 J. E. Kibbe, Sec. 50-12s-3e. T.D. 8,019 ft.; abd.

Bancroft—Beauregard Parish

Republic Prod. Co.'s No. 9 Columbia Ld. & Tmbr. Co., Sec. 15-6s-13w. T.D. 7,-330 ft.

Republic Prod. Co.'s No. 11 Columbia Ld. & Tmbr. Co., Sec. 16-16s-13w. Drlg. sh. 2,720 ft.

Republic Prod. Co. No. 9 Lutcher Moore, Sec. 15-16s-13w. T.D. 11,018 ft.; 5½-in. csg. 11,018 ft.; W.O.C.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 St. Mary Parish Sch. Bd., Sec. 16-16s-12e. Drlg. sh.&L. 10,-807 ft.

Texas Co. No. 2 State-Bateman Lake, Sec. 21-16s-12e. 7⅝-in. csg. 10,985 ft.; T.D. 11,609 ft.; perf. csg. 10,822-45 ft.; tstd. gas; sqzd.; perf. csg. 10,702-27 ft.; tstd. gas; reperf. csg. 10,475-95 ft.; tstd. gas-cut mud; perf. csg. 9,580-94 ft.; showed gas; reperf. csg. 9,675-85 ft.

Baton Rouge—East Baton Rouge Parish

W. V. Bowles' No. 2 Richard Community, Sec. 45-7s-1e. R.U.

W. V. Bowles et al's No. 1 E. Reinkin, Sec. 46-7s-1e. T.D. 6,518 ft.; run 5½-in. csg. 4,440 ft.; perf. csg. 4,350-60 ft.; I.P.; gas well.

Guaranty Oil Co. No. 2 Morgan, Sec. 65-7s-1w. T.D. 6,530 ft.; 5½-in. csg. 6,450 ft.; comp., no gage.

Wm. Helis' No. 2-B Duplantier, Sec. 68-7s-1w. T.D. 6,502 ft.; 7-in. csg. 6,485 ft.

Wm. Helis' No. 8-A Duplantier, Sec. 65-7s-1w. T.D. 6,472 ft.; 7-in. csg. 6,463 ft. I.P. 272 B.P.D.; ¼-in. ck.

Wm. Helis et al's No. 2-D D. D. A. Duplantier, Sec. 66-7s-1w. T.D. 6,474 ft.; 7-in. csg. 6,461 ft.; I.P. 60 B.P.D.; ¼-in. ck.; well started to show S.W.; killed.

Wm. Helis' No. 3 Masteriste, Sec. 66-7s-1w. Spd.

Wm. Helis' No. 2 Williams, Sec. 66-7s-1w. Drlg. sh. 160 ft.

J. Edw. Jones' No. 1 Nichols Community, Sec. 45-7s-1e. T.D. 6,513 ft.; 5½-in. csg. 6,513 ft.; perf. csg. 6,511-13 ft.

T. G. Markley et al No. 3 Knox, Amis-Farnbacher, Sec. 66-7s-1w. Loc.

T. G. Markley et al's No. 5 Knox-Amis-Farnbacher, Sec. 66-7s-1w. Drlg. sh. 4,000 ft.

Marshland Oil Co.'s No. 1 J. B. McDonald, Sec. 45-7s-1e. Loc.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 19 State-Bay St. Elaine, Sec. 18-22s-18e. T.D. 6,500 ft.; 9⅝-in. csg. 6,400 ft.; T.D. 7,028 ft.; 7-in. csg. 7,028 ft.

Texas Co.'s No. 59 State, Sec. 19-23s-20e. Drlg. sdy. sh.&L. 4,194 ft.

Bayou Choctaw—Iberville Parish

Standard Oil Co. (La.) No. 11 Wilbert, Sec. 53-8s-11e. T. salt 718 ft.; drlg. salt 4,648 ft.

Bayou des Glaise—Iberville Parish

Humble O. & R. Co. No. 1-B Wilbert, Sec. 78-8s-8e. T.D. 3,025 ft.; 13⅜-in. csg. 3,000 ft.; T. salt 4,101 ft.; T.D. 4,182 ft.; S.D.

Humble O. & R. Co.'s No. 2-B Wilberts, Sec. 78-8s-8e. Loc.

Black Bayou—Cameron Parish

Earth Pet. Co No. 2 R. A. Moore, Sec. 18-12s-12w. Drlg. sh. 7,872 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 29 State, Sec. 17-23s-20e. Rig.

Cameron Meadows—Cameron

Magnolia Pet. Co. No. 25 Cameron Meadows, Sec. 21-14s-13e. Drlg. sh. 6,-863 ft.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 1 Cypress, Sec. 75-15s-15e. 13⅜-in. csg. 1,842 ft.; T. salt 6,-072 ft.; T.D. 6,088 ft.; P.B. 2,100 ft.

Sun Oil Co. No. 2 Dodge Sunberry, Sec. 65-15s-15e. S.D. 4,259 ft.; T.A.

Chalkley Field—Cameron Parish

Humble O. & R. Co.'s No. 5 K. B. Hanzen, Sec. 9-12s-6w. Drk.

Humble O. & R. Co. No. 4 Sweet Lake Ld. & O Co., Sec. 7-12s-6w. T.D. 8,-448 ft.; P.B. 7,508 ft.; sdtrkd.; T.D. 8,-462 ft.; fsg.

Shell Oil Co., Inc., No. 3 Hanzen, Sec. 21-12s-6w. 10¾-in. csg. 2,752 ft.; cg. oil sd. 8,818 ft.; T.S. 8,815 ft.; T.D. 9,300 ft.; 5-in. csg. 9,299 ft.; P.B. 8,-925 ft.; perf. csg. 8,883-8,915 ft.; P.B. 8,880 ft.; fsg.

Charenton—St. Mary Parish

Commerce Oil Co.'s No. 3 Parro, Sec. 31-13s-10e. T.D. 6,695 ft.; perf. csg. 6,-457-62 ft. and 6,478-83 ft.; made sqze. job.

H. J. DeArman et al's No. 2 Alleman, Sec. 21-13s-9e. Loc.

H. J. DeArman's No. 3 Alleman, Sec. 21-13s-9e. Loc.

Fifteen Oil Co. No. 2 State, Sec. 31-13s-10e. T.D. 7,943 ft.; 7-in. csg. 7,200 ft.; perf. csg. 5,895-5,900 ft.; flwd. oil and S.W.

Knisley Oils, Inc.'s No. 1 Hertel, Sec. 21-13s-9e. T.D. 1,806 ft.; P.B. 1,150 ft.; W.O.C.

Knisley Oil, Inc.'s No. 8 Hertel, Sec. 21-13s-9e. T.D. 1,134 ft.; I.P. 150 B.F., 5% S.W.

Knisley Oil, Inc.'s No. 6 Le Blanc, Sec. 21-13s-9e. T.D. 1,798 ft.; 7-in. csg. 1,-776 ft.

Pan American Prod. Co.'s No. 17 Laws Realty Co., Sec. 31-13s-10e. Drk.

Pan American Prod. Co.'s No. 6 South Coast Corp., Sec. 31-13s-10e. Drk.

Chenevville—Rapides Parish

Amerada Pet. Corp.'s No. 6 Well, Sec. 54-1s-2e. Drlg. sd.&sh. 745 ft.

Gulf Oil Corp.'s 1-A C. J. Pope, Sec. 56-1s-2e. Drlg. sh. 4,003 ft.

S. W. Richardson's No. 3 Well, Sec. 54-1s-2e. T.D. 5,817 ft.; run 5½-in. csg.

Convent—St. James Parish

Continental Oil Co.'s No. 2 Realty. P.B. T.D. 8,045 ft.; P.B. 6,342 ft.

Creole—Cameron Parish

Superior Oil Co.'s No. 8 State, Twp. 15s-8w. Drlg. sd.&sh. 6,935 ft.

Darrow—Ascension Parish

Humble O. & R. Co.'s No. 25 Community, Sec. 31-10s-2e. Loc.

Humble O. & R. Co.'s No. 16 Gumbel, Sec. 36-10s-2e. Drlg. sd. 6,040 ft.

Kivs Oil Co No 1 Duplessis, Sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 23 State, Sec. 5-22s-16e. T.D. 7,268 ft.; P.B.; sdtrkd. 7,091 ft.; T.D. 7,152 ft.; rmg.

Eola—Avoyelles Parish

Amerada Pet. Corp.'s No. 2 Glaze, Sec. 6-2s-3e. Cg. sd. 8,485 ft.

Amerada Pet. Corp.'s No. 3 Glaze, Sec. 6-2s-3e. Drk.

Amerada Pet. Corp.'s No. 3 Irion, Sec. 6-2s-3e. Loc.

Amerada Pet. Corp.'s No. 4 C. B. Marchive, Sec. 6-2s-3e. T.D. 8,525 ft.; run 5½-in. csg. 8,524 ft.; perf. csg. 8,390-8,470 ft.; I.P. 779 B.P.D.; ¼-in. ck.

Amerada Pet. Corp.'s No. 5 C. B. Marchive, Sec. 6-2s-3e. Drlg. sh. 7,060 ft.

Amerada Pet. Corp.'s No. 6 Marchive, Sec. 6-2s-3e. Drlg. sh. 1,450 ft.

Amerada Pet. Corp.'s No. 1 White et al, Sec. 7-2s-3e. Loc.

Amerada Pet. Corp.'s No. 3 R. L. Whitlow, Sec. 6-2s-3e. Loc.

Amerada Pet. Corp.'s No. 4 Whitlow, Sec. 1-2s-2e. Loc.

Amerada Pet. Corp. No. 3 Marchive, Sec. 6-2s-3e. T.D. 8,480 ft.; 7-in. csg. 8,478 ft.; perf. csg. 8,345-8,462 ft.; I.P. 665 B.P.D.; ¼-in. ck.

Amerada Pet. Corp. No. 1 Merchants & Planters Bnk., Sec. 41-1s-3e. Loc.

Gulf Exmin. Co. No. 5 Samuel Haas Est., Sec. 8-2s-3e. T.D. 8,584 ft.; 5¼-in. csg. 8,584 ft.; perf. csg. 8,565-70 ft.; flwd oil; went dead; S.D.

G. W. Kennedy et al's No. 1 R. R. Irion, Sec. 1-2s-2e. Loc.

Geo. Lilly et al No. 1 Dent, Sec. 1-2s-2e. Drlg. sh. 6,430 ft.

Sid Richardson No. 3 State-Bayou Bouef Sec. 6-2s-3e. Drlg. sh.&L. 7,836 ft.

S. W. Richardson's No. 1-A Haas, Sec. 11-2s-2e. Loc.

S. W. Richardson's No. 6 Haas Inv. Co., Sec. 7-2s-3e. Drlg. sh.&L. 7,836 ft.

Fausse Point—Iberia Parish

Texas Co. No. 6 State, Twp. 11s-8e. R.U.

Garden Island—Plaquemines Parish

Texas Co. No. 36 State, Sec. 38-23s-33e. T.D. 5,247 ft., salt; 7-in. csg. 4,754 ft.

Golden Meadows—La Fourche Parish

F. W. Bennett O. & R. Co.'s No. 1 Justillien Orgeron, Sec. 12-19s-22e. Cd. oil sd. 5,157-5,200 ft.; T.D. 5,675 ft.; 7-in. csg. 5,560 ft.; P.B. 5,476 ft.; stk. tbg. prep. to sdtrk.

Berkshire Oil Co.'s No. 3 J. Nicol, Sec. 2-19s-22e. 7-in. csg. 5,370 ft.

Taylor Fithian's No. 1 Mrs. Jacking Lambas, Sec. 2-19s-22e. Spd. and S.D.

Taylor Fithian's No. 1 Edw. J. Parra, Sec. 12-19s-22e. 7-in. csg. 5,507 ft.

Golden Meadows Oil Co.'s No. 1 Collins Unit, Sec. 12-19s-22e. T.D. 5,609 ft.; D. S. stk.

Wm. Helis' No. 1 Gaspard & Rizau, Sec. 9-19s-22e. T.D. 7,925 ft.; 7-in. csg. 7,-930 ft.

M. H. Marr and R. A. Bristol No. 1 Church property, Sec. 2-19s-22e. T.D. 7,724 ft.; sdtrkd.; T.D. 9,007 ft.; P.B. and sdtrkd., T.D. 2,652 ft.; T. sd. 2,647 ft.; 7-in. csg. 2,647 ft.; tstd. S.W. and oil; P.B. 2,000 ft.; sdtrkd.; T.D. 2,666 ft.; T.S. 2,648 ft.; flwd. oil and S.W.; perf. csg. 2,647-64 ft.; flwg. gas and S.W.

M. H Marr & G. H. Vaughn No. 1 Adam Terrebonne, Sec. 9-19s-22e. Drlg. sh. 3,285 ft.

M. H Marr and G. H. Vaughn No. 1 B. &D. Unit, Sec. 12-19s-22e. T.D. 9,089 ft.; sdtrkd. 5,050 ft.; drld. to 8,453 ft.; P.B. 8,291 ft.; sdtrkd.; T.D. 10,175 ft.; abd.

St. Mary Oil Co.'s No. 2 Choust, Sec. 12-19s-22e. Drlg. sh. 5,282 ft.

Terouche Oil Co.'s No 1 Rudolph Chermire, Sec. 12-9s-22e. T.D. 5,501 ft.; 7-in. csg. 5,501 ft.; perf. csg. 5,170-75 ft.; I.P. 181 B.P.D.; 12/64-in. ck.

Texas Co.'s No. 3 L.L.&E., Golden Meadows, Sec. 78-19s-21e. Drlg. sh. 7,412 ft.

Texas Co. No. 3 State-Catfish Lake, Sec. 76-19s-21e. T.D. 3,509 ft.; 7-in. csg. 2,-805 ft.; perf. csg. 2,753-68 ft.

Texas Co. No. 1 Theriot, Sec. 12-19s-21e. Drlg. L. 8,900 ft.

Grand Bay—Plaquemines Parish

Gulf Oil Corp. No. 6-A Grand Prairie Lv. Dist., Sec. 17-20s-10e. T.D. 9,380 ft.; fsg.

Gulf Ref. Co. No. 3 State QQ, Sec. 31-19s-19e. T.D. 8,131 ft.; 9⅝-in. csg. 8,-112 ft.; tstg.

Texas Co. No. 1 State-Lookout Pass, Sec. 48-20s-18e. R.U.

Grand Lake—Cameron Parish

Amerada Pet. Corp. No. 1 Mallard Bay State, Sec. 12-13s-4w. Drlg. sh. 9,182 ft.; gas sd. 8,300 ft.; O.S. 8,385-8,415 ft.

Superior Oil Co.'s No. 3 State. Drlg. sh. 5,363 ft.

Hackberry—Cameron Parish

Stanolind O. & G. Co.'s No. 1 Benson-Vincent, Sec. 29-12s-10w. T.D. 2,803 ft.; fsg.

Gulf Oil Corp. No. 25-A Erwin, Sec. 19-12s-10w. Drk.

Gulf Oil Corp.'s No. 26-A M. P. Erwin, Sec. 13-12s-10w. T.D. 3,251 ft.; abd.

Stanolind O. & G. Co.'s No. 20 Cameron Parish Sch. Ld., Sec. 16-12s-10w. Loc.

Stanolind O. & G. Co.'s No. 29-A Gulf Ld., Sec. 14-12s-10w. Loc.

Superior Oil Co.'s No. 7 Benson Vincent, Sec. 30-12s-10w. Drk.

Texas Co. No. 27-B State, 623 ft. S, and 5,142 ft. E of SE cor. Sec. 12-12s-10e. in Twp. 12s-9w. T.D. 7,843 ft.; salt; T. salt 7,839 ft.; P.B. 6,500 ft.; sdtkd.; drlg. sh. 6,629 ft.

Union Sulphur Co. No. 12 Doiron, Sec. 37-12s-10w. T.D. 8,064 ft.; P.B. 4,050 ft.; sdtrkd. 4,162 ft.; T.D. 6,953 ft.; 5-in. csg. 6,868 ft.; I.P. 545 B.P.D.; ¼-in. ck.

Union Sulphur Co.'s No. 1 Simon Doiron, Sec. 37-12s-10w. Drlg. sh. 1,717 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co.'s No. 3 State, Sec. 40-17s-9e. Drlg. sdy. sh. 9,500 ft.

Jeanerette—St. Mary Parish

Herton Oil Co.'s No. 6 Roane, Sec. 38-13s-9e. Drlg. sd.&sh. 2,114 ft.

Jefferson Island—Iberia Parish

Texas Co.'s No. 3 Jefferson Salt Mining Co., Sec. 58-12s-5e. Drlg. sh. 5,940 ft.

Jennings—Acadia Parish

Carter-Perrin & Brian No. 1 Martel, Sec. 47-9s-2w. T.D. 1,916 ft.; 6-in. csg. 1,-862 ft.; T.A.

Glassell-Glassell No. 8 Trusher, Sec. 43-9s-2w. Drlg. sd.&sh. 1,275 ft.

Shell Oil Co., Inc., No. 4 Conover, Sec. 40-9s-2w. 5½-in. csg. 7,166 ft.; T.D. 7,704 ft.; P.B. 7,666 ft.; cleaned hole to 6,888 ft.

Stanolind O. & G. Co. No. 115 Crowley Oil & Min. Co., Sec. 48-9s-2w. Drlg. sd., sh.&L. 5,474 ft.

Lafitte—Jefferson Parish

Texas Co. No. 14 Lafitte, Sec. 20-17s-24e. Loc.

Texas Co.'s No. 5 Madison Realty Co., Sec. 17-17s-4e. Loc.

Texas Co.'s No. 4 Marrero, Sec. 21-17s-24e. Loc.

Texas Co.'s No. 11 Rigolet Cooperative Fur Co., Sec. 29-17s-24e. T.D. 10,235 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 10 La Fourche Basin Lv. Dist., Sec. 2-18-25e. T.D. 7,242 ft.; abd.

Lake Long—La Fourche Parish

Fohs Oil Co. No. 10 State, 1,320 ft. N of No. 3, in Lake. T.D. 3,208 ft.; twisted off D.S.; sdtrkd. 2,940 ft.; T.D. 9,614 ft.; 6-in. csg. 9,614 ft.; perf. csg. 9,355-60 ft.; tstd. S.W. on D.S.T.; sqzd. perf.; W.O.C.

Lake Mongoulois—St. Martin Parish

Texas Co. No. 7 State, Sec. 10-10s-9e. 7⅝-in. csg. 10,604 ft.; drlg. sdy. sh. 10,775 ft.

Lake Pelto—Terrebonne Parish

Texas Co.'s No. 27 State, Sec. 7-23s-18e. 10¾-in. csg. 1,484 ft.; T.D. 5,233 ft.; salt; T. salt 4,718 ft.; sdtrkd.; T. salt 4,879 ft.; drlg. salt 5,551 ft.

La Pice—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Lebermuth & Israel. R.U.

Shell Oil Co., Inc.'s No. 2 Natalbany Lbr. Co., Sec. 19-9s-2e. Drlg. sh. 4,941 ft.

Leeville—Plaquemines Parish

Texas Co.'s No. 7 L.L.&E., Sec. 27-21s-22e. R.U.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 W. E. Mont, Sec. 32-19s-19e. Loc.

New Iberia—Iberia Parish

Wm. Helis' No. 14 Bernard, Sec. 54-12s-7e. T.D. 3,060 ft.; 7-in. csg. 3,042 ft.

Wm. Helis No. 9 Bolivar, Sec. 56-12s-7e. Salt 3,402 ft.; P.B.; sdtrkd.; T.D. 3,794 ft.; 7-in. csg. 3,781 ft.

Wm. Helis No. 7 J. F. Schwing, Sec. 56-12s-7e. Drlg. sh. 8,539 ft.

Texas Co. No. 2 Bryant, Sec. 25-12s-7e. R.U.

Texas Co.'s No. 11 J. P. Duhe, Sec. 26-

12s-7e. T. salt 3,412 ft.; T.D. 3,415 ft.; P.B. 2,500 ft.; sdtrkd.; drlg. sh. 3,504 ft.

Texas Co.'s No. 3 Schwing, Sec. 71-12s-7e. Drlg. sh. 1,350 ft.

North Elton—Allen Parish

Stanolind O. & G. Co.'s No. 1 G. W. Jenkins, Sec. 23-6s-3w. Loc.

Paradis—St. Charles Parish

Texas Co. No. 2 L.L.&E. Paradis, Sec. 6-14s-20e. Drlg. sh. 6,143 ft.

Port Barre—St. Landry Parish

Gulf Oil Corp.'s No. 15 Wilson & Cochran, Sec. 4-6s-5e. T.D. 4,781 ft.; P.B.; sdtrkd. 4,100 ft.; drlg. sh.&sd. 4,939 ft.

Pan American Prod. Co.'s No. 4 Cormier, Sec. 4-6s-5e. T.D. 5,425 ft.; perf. csg. 4,959-65 ft.; tstg.

Pan American Prod. Co. No. 8 Cormier, Sec. 4-6s-5e. R.U.

T. D. Spill No. 1 Gaudet, Sec. 4-6s-5e. S.D. 4,700 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 40 Orleans Lv. Bd., Sec. 13-18s-15e. T.D. 2,678 ft.

Humble O. & R. Co.'s No. 41 Orleans Lv. Bd., Sec. 13-18s-15e. Loc.

Quarantine Bay—Plaquemines Parish

Gulf Ref. Co. No. 5-A Orleans Lv. Bd., Sec. 7-19s-17e. T.D. 8,540 ft.; cd. O.S. 8,527-39 ft.

Gulf Oil Corp.'s No. 3-A Plaquemines Ld. Co., Sec. 7-19s-17e. Loc.

Gulf Oil Corp. No. 9 State QQ, Sec. 18-19s-17e. Loc.

Gulf Oil Corp. No. 13 State, Sec. 8-19s-17e. T. sd. 8,503 ft.; T.D. 8,551 ft.; tstg.

Sorrento—Ascension Parish

Sorrento Synd. No. 1 L. L. Bernard, Sec. 27-10s-4e. S.D. 1,717 ft.

South Houma—Terrebonne Parish

Shell Oil Co., Inc.'s No. 4 Peters, Sec. 72-18s-18e. Loc.

South Jennings—Jeff Davis Parish

Stanolind O. & G. Co.'s No. 1 Dan Doherty, Sec. 15-10s-3w. Loc.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 2 Calcasieu Natl. Bnk., Sec. 35-10s-4w. T.D. 9,960 ft.; drlg. plug.

Continental Oil Co.'s No. 3 Joe Sturdivant, Sec. 36-10s-4w. T.D. 9,900 ft.; I. P. 53 bbl. dist. 12 hrs.; 4/4-in. ck.

Valentine—La Fourche Parish

Wm. Helis' No. 5 Valentine Sugars, Inc., Sec. 2-17s-20e. 10¾-in. csg. 1,632 ft.; drlg. sh. 4,530 ft.

Pan American Prod. Co. No. 3 Ducas-Abribat. Drlg. sh. 6,184 ft.

Pan American Prod. Co.'s No. 21 Harang, Sec. 9-17s-20e. Drlg. sh.&L. 3,278 ft.

Pan American Prod. Co.'s No. 3-A Community, Sec. 10-17s-20e. R.U.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co.'s No. 6 Buras Lv. Bd., Sec. 27-21s-30e. Drlg. sh. 7,020 ft.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 2 Corell, Sec. 36-3s-2e. T.D. 10,360 ft.; 6-in. csg. 10,360 ft.

Continental Oil Co.'s No. 4 Orise Deville, Sec. 46-3s-2e. T.D. 9,050 ft.; I.P. 127 bbl. 8 hrs.

Continental Oil Co.'s No. 5 Orise Deville, Sec. 3-4s-2e. T.D. 9,086 ft.; run 6-in. csg.

Continental Oil Co.'s No. 5 Ludeau-Haas, Sec. 45-3s-2e. T.D. 9,083 ft.; I.P. 360 P.B.D.; 4/4-in. ck.

Continental Oil Co.'s No. 6 Ludeau Haas, Sec. 45-3s-2e. Drlg. sh. 1,454 ft.

Continental Oil Co.'s No. 2 McDaniel, Sec. 45-3s-2e. T.D. 9,100 ft.; 6-in. csg. 9,023 ft.; I.P. 304 B.P.D.; 4/4-in. ck.

Continental Oil Co.'s No. 5 Opelousas, St. Landry, Sec. 44-3s-2e. Drlg. sh. 5,135 ft.

Continental Oil Co.'s No. 2 Adam Tate, Sec. 47-3s-2e. T.D. 9,043 ft.; I.P. 363 B.P.D.; 4/4-in. ck.

Continental Oil Co.'s No. 3 Vidrine, Sec. 34-3s-2e. Drlg. sh. 8,860 ft.

West Gueydan—Vermilion Parish

Magnolia Pet. Co.'s No. 2 A. Cormier, Sec. 5-12s-2w. Drlg. sdy. sh. 6,484 ft.

West Lake Verret—St. Mary Parish

Shell Oil Co., Inc., No. 1 Michel, Sec. 1-14s-12e. Drlg. sd.&sh. 10,500 ft.

White Castle—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Baist. Driving piling.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 Raymond Hebert, Sec. 6-9s-5w. Cg. sh. 9,545 ft.

Union Sulphur Co.'s No. 1 E. A. Martin, Sec. 12-9s-5w. Loc.

Union Sulphur Co No. 3 Mrs. O'Miller, Sec. 7-9s-5w. Drlg. sh. 952 ft.

S. LOUISIANA WILDCATS

Acadia Parish

Mareaux Oil Corp. No. 2 J. E. Settig, Sec. 17-7s-1w. T.D. 1,180 ft.; S.D.: T.A.

Providence Oil Co.'s No. 1 Jos. John est., Sec. 37-10s-1e. Drlg. sd.&clay 967 ft.

Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. M.I. rig.

Allen Parish

Bel Oil Co. No. 2 J. A. Bell Est. (Blue Springs). Drk.

Assumption Parish

Shell Oil Co., Inc.'s No. 1 C. S. Eellis. Sec. 9-16s-14e. Loc.

Avoyelles Parish

Carter & Rubsamen's No. 1 I. E. Boyette, Sec. 28-3n-5e. T. Wlx. 5,205 ft.; T.D. 5,550 ft.; abd.

Beauregard Parish

Atlantic Ref. Co. No. 1 Lutcher Moore, Sec. 22-3s-11w. Loc.

Atlantic Ref. Co. No. 1 Rice Ld. & Lbr. Co., Sec. 22-3s-11w. Loc.

California Co.'s No. 2 Long Bell Lbr. Co., Sec. 12-5s-10w. Loc.

Republic Prod. Co.'s No. 9 Lutcher Moore Lbr. Co., Sec. 1-7s-12w. Drk.

Calcasieu Parish

C. L. Arnette's No. 1 Arthur Welch, Sec. 19-10s-12w. 10¾-in. csg. 130 ft.; T.D. 395 ft.; S.D.

Gulf Oil Corp.'s No. 1 Amanda Brannon, Sec. 16-11s-10w. Drlg. sh. 1,610 ft.

Humble O. & R. Co. No. 2 Edgewood, Sec. 32-7s-10w. Drlg. sh. 8,158 ft.

La.-Gulf Coast Drlg. Co. No. 1 Langdon, Sec. 13-10s-13w. S.D. 1,890 ft.

Iberville Parish

Houah & Thompson No. 1 Kessler & Folse, Sec. 40-11s-13e. S.S.O.; T.D. 10,823 ft.; D.S. stk.; fsg.

Jefferson Parish

California Co. No. 1 Adam Rutley, Sec. 2-16s-23e. 20-in. csg. 163 ft.; 13⅜-in. csg. 1,980 ft.; 9⅝-in. csg. 8,496 ft.; drlg. sh. 10,190 ft.

Continental Oil Co. No. 1 Bernstein, Sec. 2-16s-23e. Drlg. sh. 2,330 ft.

Jeff Davis Parish

Houah & Thompson's No. 1 Lacassine, Sec. 29-11s-5w. Drk.

Union Sulphur Co. No. 2 H. B. Tietje, Sec. 36-2s-4w. Drlg. sh. 9,450 ft.

Lafayette Parish

Stanolind O. & G. Co.'s No. 1 Lacaze Billeaud et al, Sec. 35-10s-5e. Loc.

La Fourche Parish

Gulf Oil Corp. No. 2 Grandison, Sec. 21-20s-23e. 13⅜-in. csg. 2,090 ft.; drlg. sh. 6,930 ft.

J. Perry Scranton No. 2 Martinez, Sec. 132-15s-17e. T.D. 10,515 ft.; 5-in. csg. 10,150 ft.; perf. csg. 10,124-36 ft.; flwd. oil and S.W.; perf. csg. 10,128-32 ft.; I.P. 312 B.P.D.; 5/32-in. ck.; T.P. 1,985 lb.

Tide Water Asso. Oil Co. No. 1 Delta Farms, Inc., Sec. 6-17s-23e. Drlg. sh. 3,039 ft.

Livingston Parish

Humble O. & R. Co.'s No. 1 Great Southern Lbr. Co., Sec. 27-7s-5e. Drlg. sh. 7,041 ft.

Orleans Parish

W. T. Burton No. 1 L.&N.R.R., Sec. 18-11s-15e. T.D. 10,394 ft.; 5½-in. csg. 10,274 ft.; perf. csg. 10,164-69 ft.; swbd. wash wtr.; drld. out to T.D. 10,300 ft.; perf. csg. 10,285-94 ft.; swbd. S.W.; P.B. 10,175 ft.; swbd. oil and showed little gas; reperf. csg. 10,116-24 ft.; well made one head, blowing wash wtr., trace of oil; P.B. 10,150 ft.; acd.; perf. csg. 10,138-44 ft.; swbd. little oil and brkah. wtr.; S.D.

W. T. Burton No. 3 L.&N.R.R., Sec. 25-11s-14e. Loc.

W. T. Burton No. 2 State-Lake Pontchartrain, Twp. 10s-10e. Driv. piling.

W. T. Burton No. 3 State-Lake Pontchartrain, Sec. 18-11s-15e. Loc.

W. T. Burton No. 4 State-Lake Pontchartrain, Sec. 18-11s-15e. Loc.

Plaquemines Parish

Gulf Oil Corp. No. 8 State P.P., Sec. 18-23s-31e. 13⅜-in. csg. 1,949 ft.; 9⅝-in. csg. 8,305 ft.; drlg. sh. 9,790 ft.

Texas Co. No. 1 State-Bastian Bay, Sec. 43-20s-28e. 10¾-in. csg. 1,924 ft.; drlg. sdy. sh. 9,547 ft.

Rapides Parish

Gulf States Prod. Co.'s No. 1 Dunman & Robinson, Sec. 69-4n-3w. Loc.

Smith & Aarnes No. 1 Eota Realty, Sec. 12-4n-3e. Drk.

St. Bernard Parish

Carter, Molero & Brian, Sec. 129-14s-14e. Drk.

Gulf Ref. Co. No. 4-State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,161 ft.; T.D. 10,632 ft.; P.B. 9,700 ft.; rmd. to 9,658 ft.; lost core bbl.; P.B. sdtrkd. 8,912 ft.; T.D. 10,528 ft.; 7-in. csg. 10,494 ft.; mlg. on csg. 10,310 ft.

St. John the Baptist Parish

Pan American Prod. Co. No. 1 Mill, Sec. 12-11s-7e (LaPlace prospect). 10¾-in. csg. 2,537 ft.; drlg. sdy. sh. 8,300 ft.

St. Martin Parish

Continental Oil Co.'s No. 1 Leveret, St. John Plantation, Sec. 42-10s-7e. O.W.D.D. T.D. 9,032 ft.; 9⅝-in. csg. 2,051 ft.; drlg. sh. 9,920 ft.

Wm. Helis' No. 1, Levert, St. John Plantation, Sec. 33-9s-7e. T.D. 5,462 ft.; taking sidewall cores.

Wm. Helis' No. 1 Rycade Oil Co., Sec. 33-9s-7e. Loc.

Shell Oil Co., Inc., No. 1 Iberville Ld. Co., Sec. 86-8s-7e. Cg. sh. 7,864 ft.

St. Mary Parish

Perry S. Cooney No. 1 A. W. Allain, Sec. 46-13s-9e. S.D. 2,600 ft.

St. Tammany Parish

Honey Island Dev. Corp. No. 1 W. C. Forbes, Sec. 33-7s-15e. T.D. 100 ft.; 20-in. csg. 87 ft.; abd.

Terrebonne Parish

Continental Oil Co. et al's No. 1 Peters, Sec. 32-19s-15e. Loc.

Shell Oil Co., Inc., No. 1-A Peters, Sec. 47-19s-19e. Drlg. sd. 9,825 ft.

Texas Co. No. 3 State-Coon Point, Twp. 23s-14e. 10¾-in. csg. 1,986 ft.; drlg. sh. 6,331 ft.

Vermilion Parish

La. Ld. & Explo. Co.'s No. 3 La. Fur Co., Sec. 9-15s-1e. Dredge canal.

Vernon Parish

Pan American Prod. Co.'s No. 1 Anderson-Post Lbr. Co., Sec. 27-2n-11w. 9-in. csg. 985 ft.; cg. sh.&sd. 4,567 ft.; T. Wlx. reported at 4,550 ft.

TEXAS

Week Ending September 30

GULF COAST FIELDS

Anchor—Brazoria County

Glenn McCarthy's No. 1 Ida M. Salmon and John Muma, Geo. Robinson Sur. R.U.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 6 Armstrong-fee, Polly-Chance Sur. Drlg. sh. 9,312 ft.

Harrison-Abercrombie's No. 7 Armstrong, Polly & Chance Sur. R.U.

Harrison & Abercrombie No. 2 Augsburger, Chas. Breen Sur. T.D. 10,355 ft.; tstg.

Mid-Continent Pet. Corp. No. 2 Chenault, C. Breen Sur. T.D. 10,400 ft.; tstg.

Sun Oil Co. No. 2 Borsodi, C. Breen Sur. 9⅝-in. csg. 7,005 ft.; drlg. sh.&L. 9,969 ft.

Sun Oil Co.'s No. 3 Campbell, C. Breen Sur. R.U.

Cedar Point—Chambers County

Standard Oil Co. of Texas' No. 24-118 State. R.U.

Seabreeze—Chambers County

Sun Oil Co. No. 2 Hoffman, T.&N.O. Sur. No. 131. T.D. 8,400 ft.; W.O.C.

South Cotton Lake—Chambers County

Salt Dome Oil Co.'s No. 3-A Lawrence, S. Barrow Sur. Drlg. sh. 5,030 ft.

Turtle Bay—Chambers County

Stanolind O. & G. Co.'s No. 2 State, Tr. 39. Loc.

Garwood—Colorado County

Davis & Co., Inc., No. 1 J. R. McLane, I.&G.N. Sur. 41. Drlg. sh. 7,905 ft.

Big Creek—Fort Bend County

Merrimac Oil Corp. No. 1 George, B. Wickson Sur. (SW flank). Spd. and S.D.

Thompson—Fort Bend County

John Blaffer's No. 2 Davis, Robt. Peebles Sur. Drlg. sh. 4,536 ft.

League City—Galveston County

Phillips Pet. Co. No. 1 Dugan, S. F. Austin Sur. T.D. 10,187 ft.; 5½-in. csg. 9,950 ft.; perf. csg. 9,226-30 ft.; flwd. oil&S.W.; reperf. csg. 9,940-43 ft.; tstd. oil and S.W.; tstg.

Phillips Pet. Co. No. 1 Dr. O. Patton (1 mi. E of production). Perf. csg. 9,177-97 ft.; flwd. S.W.; sqzd. perf.; S.D.

Phillips Pet. Co.'s No. 3 Stewart Title Guaranty Co., S. F. Austin Sur. R.U.

Phillips Pet. Co.'s No. 4 Stewart Title Guaranty Co., S. F. Austin Sur. Loc.

Phillips Pet. Co. No. 1 Wimhurst (NW extension). Drlg. 10,736 ft.

Aldine—Harris County

Earl C. Hankamer's No. 1 O. P. Hairgrove, S. L. Noble Sur. Loc.

Clear Lake—Harris County

Humble O. & R. Co.'s No. 14-C Humble-West, J. Lindsay Sur. Drlg. sh. 2,036 ft.

Humble O. & R. Co.'s No. 17-C, Humble-West, Jas. Roth Sur. T.D. 5,909 ft.; tstg.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk.

Friendswood—Harris County

Humble O. & R. Co.'s No. 3 Anderson, T. Choate Sur. Drlg. sh. 3,612 ft.

Humble O. & R. Co.'s No. 30 Beamer, T. Choate Sur. T.D. 6,044 ft.; W.O.C.

Humble O. & R. Co.'s No. 4-B Godwin, W. K. Smith Sur. Drlg. sh. 5,036 ft.

Mykawa—Harris County

McDannald Oil Co.'s No. 1 Schmeltz, R. Boatright Sur. Drlg. sh. 6,060 ft.

Fannett—Jefferson County

Gulf Oil Corp.'s No. 12 Burrell, W. H. Smith Sur. Drlg. salt 2,546 ft.

La Belle—Jefferson County

Sun Oil Co. No. 5 Broussard-Hebert, T. &N.O. Sur. No. 207. T.D. 8,710 ft.; perf. csg. 8,685-90 ft.; flwd. S.W.; made sqze. job; perf. csg. 8,667-71 ft.; tstd. S.W.; made sqze. job; S.D.

Lovells Lake—Jefferson County

Humble O. & R. Co.'s No. 9 Broussard, C. Hillebrandt Sur. Dpnd. to 7,792 ft.

Humble O. & R. Co. No. 2 W. C. Turner, Wm. Carr Sur. T.D. 7,875 ft.; P.B. 7,724 ft.; tstg.

Rowan Drlg. Co.'s No. 1 Bordages, Wm. Carr Sur. Drlg. sh. 6,910 ft.

Stanolind O. & G. Co.'s No. 1 B. A. Steinhagen, Wm. Carr Sur. Drlg. sh. 7,312 ft.

South China—Jefferson County

Hebert-Smith's No. 1 Broussard, Sarah Miles Sur. R.U.

Esperson—Liberty County

General Crude Oil Co.'s No. 6-B Esperson, A. McNeil Sur. Drlg. sh. 7,086 ft.

General Crude Oil Co.'s No. 8-B Esperson, A. McNeil Sur. Drlg. sh. 7,026 ft.

Hull—Liberty County

Gulf Oil Corp. No. 115 Phoenix Dev. Co., J. Devore Lge. (SE flank deep test). T.D. 6,595 ft.; rmg.

Martha—Liberty County

Stanolind O. & G. Co.'s No. 1 Frank Charzan, I.&G.N. Sur. 7. Drlg. 1,312 ft.

Hamman—Matagorda County

J. M. Copeland No. 1 G. L. Butler, J. T. Belknap Sur. Loc.

Orange—Orange County

John Mayo No. 1 M. J. Williams, Dyson Sur. R.U.

Port Neches—Orange County

Texas Co. No. 16 Kuhn, M. E. Hall Sur. T.D. 6,402 ft.; P.B. to sdtrk.

Texas Co.'s No. 9 Stark, M. A. E. Hall Sur. 1. Loc.

Ace—Polk County

Dick Schwab No. 1-C Kirby-West Lbr. Co., G. A. Thompson Sur. Loc.

Shell Oil Co., Inc.'s No. 1 Kirby-West Lbr. Co., G. S. Thomas Sur. Drlg. sh. 7,572 ft.

Segno—Polk County

Gulf Oil Corp. No. 4 Quinn, A. Morales Sur. R.U.

Gulf Oil Corp.'s No. 20 Wing, I.&G.N. Sur. 14. T.D. 8,117 ft.; tstg.

Gulf Oil Corp.'s No. 22 Wing, I.&G.N. Sur. 15. Drlg. sh. 6,900 ft.

Gulf Oil Corp.'s No. 23 Wing, P. Garcia Sur. R.U.

Humble O. & R. Co.'s No. 16 B. X. Kirby Lbr. Corp., P. Garcia Sur. Drlg. sd. 7,720 ft.

Spurger—Tyler County

Republic Prod. Co.'s No. 24 fee, N. Hurd Sur. T.D. 7,732 ft.

Republic Prod. Co.'s No. 25 fee, N. Hurd Lge. Drlg. sh. 7,436 ft.

Republic Prod. Co.'s No. 26 fee, N. Hurd Sur. Loc.

GULF COAST WILDCATS

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Byran Mound). M.I.M.

Hamman Explin. Co. No. 1-B Darrington, State Prison Farm, F. Bingham Sur. Rig.

Glenn McCarthy's No. 1 J. C. Carr, J. D. 996-10,004 ft.; T.D. 10,548 ft.; 7-in. csg. 10,538 ft.; perf. csg. 10,460-67 ft.; flwd. 75 B.F., 95% dist.; tstg.

Glenn McCarthy No. 1 Houston Farm Dev., James F. Perry and E. Austin Sur. 7. T.D. 10,350 ft. (cor.); flwg. 32 bbl. dist. per day; 4/4-in. ck.; tstg.

Glenn McCarthy's No. 2 Houston Farm Dev. Co., J. Perry & E. Austin Sur. 7. R.U.

Titanic Oil Co.'s No. 1 Allen, J. G. and G. W. McNeel Lge. (Allen dome). Drk.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D Smith Sur. Loc.

Edwards Drlg. Co.'s No. 1 Sloan, G. B. Jamison Sur., Turtle Bay extension area. T.D. 6,585 ft.; 5½-in. csg. 6,575 ft.; perf. csg. 6,553-55 ft.; flwd. 31 bbl. in 45 hrs.; 9/64-in. ck.

J. R. Turnbull et al No. 1 W. C. Shepherd, R. A. Porter Sur. T.D. 6,466 ft.; 7-in. csg. 6,429 ft.; flwd. oil, gas, and wash wtr.; sanded up; sdtrkd. 6,463 ft.; T.D. 6,700 ft.; P.B.; perf. 6,457-65 ft.; swbg.

Colorado County

Cockburn Oil Corp. No. 1 R. W. Ferra, H. Chrisman Sur. Loc.

Strake Pet. Co. No. 1 Ned Burford, E. Tumlinson Sur. 10¾-in. csg. 998 ft.; cg. sh. 7,505 ft.

Fort Bend County

H. C. Cockburn No. 1 Dzierzanowski, Emma Meyer Sur. 8. 10¾-in. csg. 1,058 ft.; T.D. 7,743 ft.; flwg. 112 B.F. P.D.; 7/32-in. ck.; 95% dist., 5% S.W.

Lloyd Farr et al's No. 1 Beard, H.&T.C. Sur. 118. S.D. 2,110 ft.; abd.

Hebert & Smith's No. 1 A. P. George. H.&T.C. Sur. 39. Drlg. sh. 4,261 ft.

Magnolia Pet. Co.'s No. 1 G. H. Huntington, Henry Scott Sur. R.U.

Woodland Oil Co. No. 1 Herietta Berg et al, H.&T.C. Sur., Sec. 25. T.D. 7,410 ft.; 9⅝-in. csg. 7,391 ft.; P.B. 7,269 ft.; top junk 7,248 ft.; set whpstk 7,239½-47 ft.; S.D. 7,384 ft.; abd.

Galveston County

Sun Oil Co.'s No. 1-176 State. Driving piling.

Harris County

L. R Wilhite et al No. 1 Houston-Harris Co. Ship Channel, Nav. dist., Ezekiel Thomas Sur. 13-in. csg. 388 ft.; S.D 2,600 ft.

Jackson County

Skelly Oil Co.'s No. 1 Kunover, Schwind & Mathers subd., Blk. 4 (Francitas field). R.U.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.

Montgomery County

A. T. Grabowski et al's No. 1 Gay, Wm Landrum Sur. T.D. 4,005 ft.

Orange County

American Eagle Oil Co. No. 2 Geo. Pell. Geo. A. Patillo Sur. Loc.

Polk County

Patrick-Tyrell Drlg. Co. No. 1 O. L. Jackson, C. Devore Sur. Loc.

San Jacinto County

F. J. Hynes No. 1 Foster Lbr. Co., M Brown Sur. Rig.

F. J. Hynes No. 2 Foster Lbr. Co., M. Finch Sur. Loc.

Tyler County

Oil Equity Corp.'s No. 2 Kountz, E. Smith Sur. Loc.

Washington County

Mount Selman Oil Co. No. 1 Fritz Fuelberg, W. Lightfoot Sur. Spd.

Wharton County

Humble O. & R. Co.'s No. 1 W. E. Rogers, D. D. Baker Sur. Drlg. sh. 7,512 ft.

Dr. T. M. Neal No. 1 fee, Elisha Flack Sur. Loc.

Sun Oil Co.'s No. 1 Winnie M. Pool, G. H.&R.R. Sur. Drlg. sh. 1,236 ft.

S. W. TEXAS WILDCATS

Aransas County

Continental Oil Co.'s No. 1 St. Charles Co., R. D. Blassman Sur. 18⅝-in. csg. 290 ft.; drlg. sh. 3,516 ft.

Bell County

G. P. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,208 ft.

Bexar County

C. A. Smith's No. 1 W. G. Schuwirth, Jose Antonio de la Garza Sur. Drlg. 1,016 ft.

J. A. Tarver's No. 1 Florence Lam, Manuel de Luna Sur. 3. Drlg. sh. 1,350 ft.

Blanco County

E. L. Nixon's No. 3 Crist, John McClenechen Sur. 94. Loc.

Caldwell County

Dr. J. F. Atha's No. 1 G. W. Carter. Gideon Pace Sur. T.D. 1,793 ft.; tstg.

Calhoun County

Coronado Corp. No. 1 K. Welder, Hidalgo Sur., 3 mi. SE Seadrift. Drlg. sh. 7,696 ft.

Cameron County

Sal Vieja Oil Co. et al's No. 2 Gatewood Newberry, San Martin gr. Drlg. sh. 6,849 ft.

De Witt County

Marshall Purvis No. 1 Afflerback, L. W. Criswell Sur. T.D. 6,450 ft.; P.B.; sdtrkd.; drlg. sh. 7,036 ft.

Duval County

W. L. Catlin et al No. 1 Louis Escapule, J. Poitevent Sur. No. 73. Loc.

Sam Cunningham et al's No. 1 E. A. Lopez, P. Caballiero Sur., Sec. 14. Cg. sh. 6,056 ft.

Lanning & Coffield's No. 1 R. Lopez, J. Poitevent Sur. 455. T.D. 2,002 ft.; 5½-in. csg. 1,806 ft.; perf. csg. 1,708-33 ft. swbd. S.W.; abd.

Magnolia Pet. Co.'s No. 1 D.C.R.C., J. Poitevent Sur. Drlg. sh. 220 ft.

Ownby Drlg. Co.'s No. 1 Hinojosa, A.B. &M. Sur. 131. Loc.

J. D. Smith's No. 1 Ruiz, C.&M.R.R. Sur. 127. T.D. 2,595½ ft.; abd.

South Coast Oil Corp., et al's No. 1 F. G. Garcia, H.&G.N. Sur. Drlg. sh. 5,212 ft.

Standard Oil Co. of Texas' No. 1 Jack Casey, San Pedro de Charco Redondo gr. T.D. 6,746 ft.; run 7-in. csg. to test.

Falls County

J. Shaunfield No. 1 Barganier, J. M. Graham Sur. T.D. 1,195 ft.; Buda L.; S.S.O.; waiting on csg.

Goliad County

D. C. Matthews et al's No. 1 G. J. Swickheimer, Cuadrilla Irrg. Sur. 10-in. csg. 306 ft.; T.D. 3,509 ft.; 5½-in. csg. 2,914 ft.; tstg.

John Mayo No. 1 Swickheimer, Sec. 20, Cuadrilio subd., Wm. Patterson Sur. 9 mi. E of Goliad). Loc.

Gonzales County

Mudge Oil Co.'s No. 1 T. G. Edwards-Wesley, W. Pace Sur. Loc.

E. E. Young No. 1 Moore, D. O. Warren Sur. S.D. 1,966 ft.

Guadalupe County

Burton-Garvin & Womack's No. 2 Henry Weil, E. de Los Santos Coy Sur. No. 93. R.U.

Hays County

B. C. Mann et al No. 1 Reeder, R. Vaughn Sur. Drlg. 2,860 ft.

Hidalgo County

San Juan Oil Co. No. 1 J. C. Kelly, J. C. Kelly subd., Antonio Velasco Sur., Porc. 70. Rig.

Jim Hogg County

W. L. Goldston's No. 1 E. G. Canales, Marcelo Ynojosa gr. T.D. 5,803 ft.; 5½-in. csg. 5,318 ft.; perf. csg. 5,245-58 ft. and 5,215-25 ft.; swbd. S.W.; abd.

Magnolia Pet. Co.'s No. 4-A Merchant State Bnk. & Tr. Co., S. L. Fite Sur. R.U.

C. A. Nibert et al's No. 1 Yeager Sur. 20. S.D. 1,600 ft.

T. S. Seibienski's No. 1 Down Royalty Corp., El. Javali gr. Drlg. sh. 2,290 ft.

Jim Wells County

Austin Pet. Co. No. 1 H. M. Reed (3 mi. NW Orange Grove), J. Poitevent Sur. Cmtd. surf. pipe 190 ft.; S.D. 210 ft.

Rodney DeLange et al's No. 1 Maggie McNeill. Benito Lopez de Jean gr. Tstd. 450 lb. pres.; D.S.T. 4,762-80 ft.

Magnolia Pet. Co.'s No. 1 C. C. Hornsby, Los Olmos y Loma Blanca gr. R.U.

Magnolia Pet. Co.'s No. 1 E. H. Stolze et al, Los Olmos y Loma Blanca gr., Lot 16, Blk. 10. Drlg. sh. 5,718 ft.

Parr & Delaney Oil Co. et al's No. 1 P. Garcia, La Anima Solo gr. Drlg. sh. 2,625 ft.

Royal O. & G. Co.'s No. 1 P. Garcia, La Trinidad gr. T.D. 6,015 ft.; 7-in. csg. 4,705 ft.; tstg.

Kendall County

C. M. Dewey No. 2 Seidensticker, R Davis Sur. No. 20. S.D. 714 ft.

Kimble County

W. S. Kelly No. 1 A. L. Bierchwale, D Lloyd Sur. S.D. 135 ft.

C. H. Wolff & M. C. Moore No. 1 W. J Wilkinson, Brook & Burleson Sur., Sec. 24. S.D. 20 ft.

Lavaca County

Midway O. & R. Co.'s No. 1 Annie Schumacher. Drlg. sh. 4,965 ft.

Kleberg County

Humble O. & R. Co.'s No. 1 M. Garza, Rinconde Santa Gertrudis gr. Drlg. sh. 2,367 ft.

Pure Oil Co.'s No. 1 State, Tr. 171 (Bird Island field). Drlg. sh. 2,436 ft.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. Pmpd. 100 B.F.; 36 hrs., 3 bbl. oily emulsion; cd. L. 6,461-90 ft.; T.D. 6,571 ft.; S.D.

Live Oak County

Northworthy Proc. Co. et al's No. 1 Knight, T. R. Johnson Sur. Drlg. 860 ft.

Smith & Storey's No. 1 J. T. Lyne. J Cooke Sur. 171. Cd. sd. oil odor 2,637-40 ft.; make D.S.T.

L. W. Stieren No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

J. C. Carter's No. 1 Thomas Franklin, E. L. Taylor Sur. 30. Loc.

C. D. Scarborough No. 1 First Natl. Bk of Rosebud, Jas. Garner Sur. Drlg. 686 ft.

Medina County

Elstone Oil Co.'s No. 1 Wm. Mann. J Campbell Sur. 24. Run csg. to test; T.D. 793 ft.

Milam County

M. B. Cloud's No. 1-B Henniger, S. C Robertson Sur. T.D. 700 ft.; 7-in. csg 700 ft.

M. A. Hays et al's No. 1 Sroboda, Wm. Punchard Sur. Drlg. sh. 100 ft.

W. H. Lawrence et al's No. 1 J. F. Bartek, Jose De Pena Sur. Drlg. sh. 318 ft.

Nueces County

N. W. Hunter et al's No. 1 A. R. Mantor, Briggs & Kuykendall subd., Blk. 23. Loc.

John Manley et al No. 1 Ruegg, Geo. H. Pauls subd. of Driscoll ranch. Loc.

Premont Pet. Co.'s No. 1 G. A. Langham, Los Sauces gr., Lot 12, Sec. 25. T.D. 5,240 ft.; tstd. 360 ft. oily mud, 30 ft. S.W.; drlg. sh. 6,316 ft.

Renwar Oil Corp. No. 1 Wright, J. V. L. De Herrera gr. (Riverside area). T.D. 5,015 ft.; abd.

Stanolind O. & G. Co.'s No. 1 Jennie Thompson, J. V. L. de Herrera gr. (Riverside field). Loc.

Refugio County

Norsworthy Prod. Co. No. 1 Wood. John Sinnott Sur. T.D. 6,530 ft.; well tried to blow out.

Rutherford & Royal O. & G. Co.'s No. 1 E. E. Swift, Esteben Lopez Sur. Spd.

San Patricio County

Seaboard Oil Co.'s No. 1 M. C Smith, Juan Hart & Sons Sur. T.D. 7,296 ft.; 5½-in. csg. 7,105 ft.

Wellington Oil Co.'s No. 2-B Welder, Victoriano Tares & Pedro Villareal Sur. R.U.

Wellington Oil Co. No. 6 Welder, Hart Sur. (Angelita). T.D. 7,051 ft.; 5½-in. csg. 6,305 ft.; perf. csg. 6,225-35 ft.; R.U. to pmp.

Starr County

Banks, Miller Oil Co.'s No. 1 McLean, Unit 3, Valle Del Rico Rio Grande subd., J. B. Villareal Porc. T.D. 2,756 ft.; cmtd. csg. 2,425 ft.

C. L. Foster's No. 1 H. Garza, Juan Salinas, Porc. No. 71. S.D. 100 ft

Gilcrease Oil Co.'s No. 1 I. G. Gutierrez, J. LaGarza Falcon Porc. 104. R.U.

Lynes & Robertson's No. 1 Villareal, C. C.S.D.&R.G.N.G.R.R. Sur. 241. Loc.

Verne Clopton's No. 1 Lee M. Green, J. J. Garza Falcon, Porc. 81, Lot 7, Sh. 85. R.U.

Randon Oil Co.'s No. 1 R. E. Margo, Los Comitas gr. Cg. sh. 4,160 ft.

W. W. Zimmerman's No. 1 Wood, Porc. 84. Drlg. sh. 2,510 ft.

Travis County

G. C. Richardson's No. 1 U. Chamberlain, Jas. Manning Sur. 37. Drlg. sh. 360 ft.

Victoria County

Colton & Colton's No. 1 E. Terrell, A. Sideck Sur. Loc.

Tom L. Gunter et al No. 1 Dietzel (1 mi. E of Coletto Creek field). Rig.

Houston Oil Co.'s No. 1 Jacob Hoenstein, P. Gallard Sur., Lot 43. T.D. 3,041 ft.; 5½-in. csg. 3,028 ft.; comp. as gas well.

Geo. E. Smith's No. 1 J. E. Stubbs, R. Manchola Sur. R.U.

Stanolind O. & G. Co. No. 7 Vandenberge (Placedo). T.D. 3,965 ft.; P.B. to sdtrk.; T.D. 3,379 ft.; 5-in. csg. 6,375 ft.; flwg. 27 B.P.D.; ½-in. ck.

Trinity Drillers et al's No. 1 I. G. Edwards, L. Rodriguez Sur. 10¾-in. csg. 485 ft.; T.D. 6,006 ft.; tstg.

Trinity Drillers et al's No. 1 R Vogt, T. T. Victoria Sur. Drlg. sh. 1,630 ft.

Wellington Oil Co. et al's No. 1 J. W. Boothe, T.&N.O. Sur., Blk. 1, Sec. 10. R.U.

Williamson County

Brown-Gardner et al's No. 1 G. W. Griffin, Harrison Owens Sur. S.D. 2,285 ft.

Webb County

J. M. Anderson et al No. 1 Frost, C.C.S D.&R.G.N.G.R.R. Sur. No. 17. Loc.

O. W. Killam's No. 1 fee, H.E.&W.T. Sur. 1859. Drlg. sh. 2,575 ft.

Magnolia Pet. Co.'s No. 2 Garcia-Arriba Alberca, De Arriba gr. R.U.

J. R. B. Moore et al's No. 1 A. S. Billings, C.C.S.D.&R.G.N.G. Sur. 13. Loc.

Tide Water Asso. Oil Co. No. 7 Bruni, Blk. 7, M. Arispe gr. (deep test Bruni field). Drlg. sh. 6,305 ft.

Zapata County

Joe Martinez No. 2 Bruni, J. V. Borego gr. T.D. 938 ft.; S.D.

WEST TEXAS WILDCATS

Brewster County

H. D. Wilcox's No. 2 Kokernot, Sec. 23, Blk. C, J. V. Massey Sur. Rng. 7-in. 1,546 ft.

Cochran County

Dean & Hyde's No. 1 Reed & Taylor, Sec. 21, Harrison & Brown Sur., SE of Duggan pool. C.&P.

Humble O. & R. Co. No. 1 J. Westheimer, Lab. 1, Lge. 146, Stonewall Co. Sch. Ld. Fsg. 6,146 ft.

Crane County

Gulf Oil Corp. No. 5 M. B. McKnight, Sec. 1, Blk. 21-B, P.S.L. Sur. C.O. 5,246 ft.

Magnolia Pet. Co. No. 21 Hardewick-Univ., Blk. 30, Sec. 27. University Sur. (Extension). Drlg. 3,360 ft.

Crockett County

Kimberlin's No. 1 J. W. Robbins, Sec. 4, Blk. B, G.C.&S.F. Sur. Loc.

Crosby County

Gulf Oil Corp. No. 1-C Swenson, Sec. 96, Blk. 2, H.&G.N. Sur. Drlg. 7,320 ft.

Dawson County

Ray Albaugh's No. 1 Dewey Hogg (O. W.D.D.). Drlg. 4,125 ft.

Ector County

R. H. Gill No. 1 J. E. Parker, Sec. 12, Blk. 45, T.&P. Sur. W.O.R. 145 ft.

Sloan & Zook No. 1 J. L. Johnson, Sec. 34, Blk. 43, T.&P. Sur. P.B. 4,167 ft.; tstg. 24 B.O.P.D.; P.B. 4,167 ft.; 19 B.O. and 16 B.W.; 6 hrs.; pmpd. 7 B. O. and 7 B.W. daily for 7 days; S.D.O.

El Paso County

Tri-State Oil Co.'s No. 1 Kimble, Sec. 237, A.T.&S.F.R.R. Sur. U.R. 5½-in. 2,118 ft.

Gaines County

Ohio Oil Co. No. 1 W. L. Gibbs, Sec. 270, Blk. G, W.T.R.R. Sur. S.I. 5,268 ft.; flwd. 735 bbl. in 15 hrs. through ¼-in. tbg.

Howard County

F. H. E. Oil Co. et al No. 2 D. H. Snyder, Sec. 21, Twp. 1s, Blk. 30, T.&P. Sur.; (extension). Drlg. 2,854 ft.

M. L. Richards No. 1 Read, Sec. 36, Blk. 30, T.&P. Sur. Drlg. 2,250 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twp. 6. S.G. 6,340-45 ft.; T.D. 6,402 ft.

Haymon Krupp No. 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur. S.D. 6,015 ft.

Irion County

P. I. Fox et al No. 1 J. M. Nutt, Sec. 5, Gonzales C.S.L. S.D.O. 335 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.W.T. Sur. S.D.O. 4,450 ft.

Pecos County

Rockdale Oil Co. No. 1 A. Sullivan, Sec. 72, Blk. 10, H.&G.N. Sur. Drlg. 1,204 ft.

Stanley Thompson No. 1 Elsinore Cattle Co., Sec. 54. Blk. D. G.C.&S.F. Sur Drlg. jnk. 7,071 ft.; T.D. 7,342 ft.

Superior Oil Co. No. 1 V. W. Crockett-Continental Oil Co., Sec. 7, Blk. 110 T.C.R.R. Sur. C.&P.

Reeves County

Forest Development Corp. No. 1 I. B. Scott, Sec. 286, Blk. 13, H.&G.N. Sur.

LEGAL

Department of the Interior, United States Land Office, Santa Fe, New Mexico. Notice is hereby given that leases of the oil and gas deposits in the following lands in the Fulger Basin gas field, undefined, New Mexico, are offered to the responsible qualified bidder of the highest bonus per acre, pursuant to the provisions of section 17 of the leasing act of February 25, 1920 (41 Stat. 437) as amended, at the royalty rate scale in the lease form shown in circular 1386, at a sale to be held in the office of the Register of the district land office at Santa Fe, New Mexico, at 10:00 o'clock on October 26, 1939: Unit No. 1, SE¼ SW¼ Sec. 10, W½ SW¼, SE¼ Sec. 15, T. 29 N., R. 12 W., N.M.P.M., 280 acres, and Unit No. 2, N½ and N½ S½ Sec. 22, T. 29 N., R. 12 W., N.M.P.M., 480 acres. The units may be consolidated in a single lease to the same qualified bidder. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount of each bid, and file a showing of qualifications to receive the lease required by section 17 of General Land Office circular 1386. The remaining four-fifths, together with the annual rental in advance at the rate of $1 per acre, must be paid and a $5000 corporate surety bond must be furnished prior to the issuance of the leases. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

Statement of the Ownership, Management, Etc., of

THE OIL AND GAS JOURNAL

October 1, 1939

(This statement is published in compliance with the Act of August 24, 1912.) Published weekly (Thursday) at Tulsa, Okla.

Publisher: The Petroleum Publishing Company, Tulsa, Okla.

Editor: C. O. Willson, Tulsa, Okla.

Managing Editor: W. T. Anderson, Tulsa, Okla.

Business Manager: S. H. Rourke, Tulsa, Okla.

Stockholders holding 1 per cent or more of total amount of stock: Helen B. Lauinger, Tulsa, Okla.; P. C. Lauinger, Tulsa, Okla.; Estate of Edward R. Boyle, Oil City, Pa.; Edward P. Boyle, Oil City, Pa.; Edmond C. Breene, Trustee for Edward R. Boyle, under the will of Jennie B. Egan, Deceased, Oil City, Pa.

Known bondholders, mortgagees and other security holders holding 1 per cent or more of the total amount of bonds, mortgages or other securities: None.

S. H. ROURKE,
Business Manager.

Sworn to and subscribed before me this 22nd day of September, 1939.

H. R. BARNETT,
Notary Public.

My commission expires October 3, 1941.

Prep. P.B. 250 ft.; S.W. rose in hole in 8 hrs. at 5,333-36 ft.; will shoot 4,-900-28 ft.

Presidio County

Marfa Oil Co. No. 1 Fischer ranch, Sec 31, Blk. 8, G.H.&S.A. Sur. M.I.M.

Scurry County

Coffield & Guthrie's No. 1 Reiter, Sec 155, Blk. 97, A.&T.C. Sur. M.I.M.

Terrell County

E. M. Thomasson No. 1 Bates, Sec. 31, Blk. 1, H.&G.N. Sur. Drlg. 295 ft.

Tom Green County

H. A. Ringle No. 1 Seal, Sec. 133, Washington Co. R.R. Sur. D.&A. 1,625 ft.

Dan Short's No. 1 J. G. Davidson, NW part of Lovie P. Moore Sur.; 3,500-ft. test. Drlg. 2,385 ft.

Upton County

N. A. Moore's No. 1 A. M. Mayhew, Sec 2, Blk. W, G.C.&S.F. Sur. Drlg. 605 ft.

Ward County

Gulf Oil Corp. No. 5 Wristen, Sec. 18, Blk. 5, H.&T.C. Sur.; scheduled Ordovician test. P.B. 2,300 ft.; drlg. out 2,355 ft.

Magnolia Pet. Co.'s No. 2-43 Sealy, Sec 43, Blk. F, G.M.M.B.&A. Sur. Drlg. 2,641 ft.

Yoakum County

Fred M. Allison Prod. Co. No. 1 D. T Bush Est., Sec. 629, Blk. D, J. H. Gibson Sur. S.D.O. 5,462 ft.; made 1½ bbl. S.W. in 6½ hrs.

Aloco Oil Co. No. 1 W. S. Knight, Sec. 773, Blk. D, J. H. Gibson Sur. (Extension). Comp.; 773 bbl. at 4,940-5,344 ft.

TEXAS PANHANDLE

Armstrong County

Holmes, Newblock & Haley No. 1 Ed Moore, Sec. 319, Blk. 4-B, H.&G.N. Sur. Drlg. 4,640 ft.

Castro County

English et al No. 1 Gundlach, NW¼ Sec. 145, Blk. 6-M, S.K.&K. Sur. Loc.; no report.

Deaf Smith County

Uscan No. 1 Farwell, Sec. 18, Blk. 3, X Sur. C.O. 5,650 ft.

Hartley County

Phillips Pet. Co. No. 1 W. K. Gordon, Sec. 3, Blk. 44, H.&T.C. Sur. Drlg. 3,455 ft.; showed 34,300,000 cu. ft. gas below 3,415 ft.

Lipscomb County

Phil O'Neil's No. 1 Jacob Koch, NW¼ SW¼ Sec. 539, T.&T.C.R.R. Sur. S.D.O. 530 ft.

Ochiltree County

James R. Macon et al No. 1 W. R. Norris, SW SE Sec. 212, Blk. 43, H.&T.C. Sur. Bailing rotary fluid preparatory to resuming drlg. with C.T.; T.D. 6,274 ft. C.O. 5,000 ft.

Potter County

Les Whitaker No. 1 D. Pavillard, Sec 101, Blk. 2, A.B.&M. Sur. S.D. 525 ft.

Wheeler County

Smith Bros. Ref. Co.'s No. 1 Ribble, Sec. 46, Blk. 5-A, H.&G.N. Sur. C.O. 4,135 ft.

E. C. TEXAS WILDCATS

Anderson County

A. Baggett's No. 1 J. R. Gillispie, J. R. Ferguson Sur., 2½ mi. NE of Frankston. S.D. 4,245 ft.

R. H. Williamson No. 1 O. G. Rogers, Wm. Greenwood Sur., 6 mi. SW of Elkhart. Drlg. 1,800 ft.

Angelina County

Ginter Bros. No. 7 Copes Hrs., J. Morin Sur., 3 mi. E of Dibol. S.D. 800 ft.

McHenry's No. 1 Bowers, A. Flores Sur., 4 mi. N of Lufkin; 3,250 ft. SE of McHenry's No. 1 Russell dry hole at 1,032 ft. Loc.

Ellis County

C. M. Beckner et al No. 1 H. A. Styles, A. Bullock Sur., 3½ mi. W of Maypearl. S.O. 905 ft.

Falls County

R. D. Salisbury No. 1 W. M. Shankle, J. A. Manchaca Sur., 1½ mi. NE Chilton. W.O.C. 1,274 ft.

Fannin County

H. W. English's No. 1 T. W. Ayers, J. D. Seales Sur. Drlg. 685 ft.

C. Newburn's No. 1 A. G. Allen, M. Caldwell Sur., 7 mi. NE of Banham. Drlg.

Freestone County

Brothers Oil Co.'s No. 1 P. D. C. Ball est., M. Rionda Sur., 5 mi. NW of Butler. Drlg. 3,580 ft.

W. H. Keeling's No. 1 Bounds-Longbotham, R. B. Longbotham Sur. S.D. 30 ft.

Grayson County

J. M. Jones' No. 1 Golling, I. Southward Sur., 10 mi. NW of Denison. S. D. 601 ft.

Prince Bros.' No. 1 Williams, S. Nix Sur., 2 mi. NE of Van Alystine. M.I. new rig; T.D. 1,173 ft.

Ross & Marshall's No. 2 E. Christman, M. Ahuit Sur., 5 mi. NW of Denison. S.D. 160 ft.

Houston County

J. C. Cook and Shell Oil Co.'s No. 1 B. T. Masters, Levina Carpenter Sur., ½ mi. NW of Grapeland pool; 10,000-ft. test. R.U.

Grapeland Oil Co.'s No. 1 Guice, J. D. J. Procilla Sur., 2 mi. W of Grapeland. W.O.C. 1,001 ft.

Humble O. & R. Co.'s No. 1 A. Pouncey, J. G. Thompson Sur., Navarro Crossing area. T.S. 5,884½ ft.; W.O.C.

J. C. Wynne et al's (Shell Oil Co., Inc.) No. 1 G. E. Dorsey, M. Sallas Sur., 2½ mi. S of Percilla; E 102 ac. of tr.; 10,000-ft. test. Drk.

Hunt County

Raymond Hedge's No. 1 R. E. Hale, G. W. Wright Sur., ½ mi. NW of Campbell. W.O.C. 100 ft.

Westmount Oil Co. No. 1 Stevens, J. L. Terry Sur., Abst. 1231, 1½ mi. N of Celeste. D.P. stk.; fsg. 4,916 ft.

Leon County

J. K. Hughes No. 1 Moore, J. N. Boyd Sur., 6 mi. SE Buffalo. Swbg. S.W., and 5% oil 5,534 ft.; S.I. 5,534 ft.

Limestone County

Bunn & Willis' No. 1 Clyde Moore, G. W. McGrew Sur., 1½ mi. NE of Coolidge. Drlg. 1,510 ft.

J. R. Bunn's No. 1 F. Winmill, J. C. Neil Sur., 2½ mi. NW of Tehuacana. D.& A.; T.D. 2,493 ft.

M. Samuel's No. 1 C. Barrow, W. G. McKinsey Sur., 4 mi. NW of Thornton. Drlg. 5,029 ft.

Nacogdoches County

D. McDaniels No. 1 T. H. Seale, J. A. Cherino Sur., just outside of city limits of Cherino. Prep. to D.D. 842 ft.

Navarro County

C. F. Carter's No. 1 Allen Eden, M. Shire Sur., 2 mi. NE of Angus. Drlg. 700 ft.

Topaz Oil Co.'s No. 3 Trammel, A. C. Kyser Sur., SW of Flag Lake, 600 ft. S of No. 2 well. T.S. 2,996 ft.; rng. elec. sur.; T.D. 3,000 ft.

Red River County

Dave Flesch's No. 1 Bailey, J. Robbins Sur., 1 mi. W of Bagwell. Loc.

Kansas-Oklahoma Pet. Corp. No. 1 R. H. Ringwald, A. Moore Sur., 3 mi. W of Manchester. S.D. 806 ft.

Robertson County

J. E. Cox No. 1 Sandifer, H. Henry Sur., 3½ mi. SE of Franklin. Loc.

Rusk County

A. O. Whittington's No. 1 Kangerga Bros., Ign. Castro Sur., 9½ mi. N and slightly E of Pirtle. Bldg. drk.

Smith County

Dr. Grant's No. 1 J. W. Waters, J. Stapler Sur., 1½ mi. NE of Garden Valley. Drk.

Martin & Moore No. 1 B. H. Lunceford, W. Shipp Sur., 3 mi. NW of Garden Valley. Drlg. 1,835 ft.

Texas Co.'s No. 1 A. A. Scritchfield, D. Page Sur., 2 mi. NW of Bullard. Drlg. 6,030 ft.

Trinity County

Gossage et al's No. 1 First Natl. Bnk., B. F. Wright Sur., S of Trinity. R.U. and S.D.

Van Zandt County

O. W. Killiam's No. 1 Republic Ins. Co., J. Salinga Sur., 2 mi. NE of Myrtle Springs. Loc.

NORTH TEXAS WILDCATS

Archer County

Bridwell Oil Co.'s No. 1 Thom, W. H. Spillers Sur., Abst. 375. 6⅝-in. 3,773 ft.; brkn. sat. L. 3,810-33 ft.; S.S.O. 3,846-56 ft.; W.O.T.

H. H. Frazier's No. 1-A W. M. Coleman, SW cor. Lot 24, W. M. Coleman Lds., Brazos Co. Sch. Lds. Loc.

Waldo E. Stephens et al's No. 1 Hattie B. Adae, SE part of Blk. 7, Palo Pinto Co. Sch. Lds., 3 mi. SE of Griffin pool. Set 10-in. 100 ft.; W.O.C.

Clay County

L. T. Burns No. 1 J. T. Pickett, W. W. Yearly A-745. 6⅝-in. 4,430 ft.; O.S. 4,-430-44 ft.; P.B. 4,380 ft.; drld. out to 4,450 ft.; S.D.O.

Nixon Brothers and J. W. Dutton No. 1 Tanman, SE¼ of Block 4, Cherokee C.S.L. S.D. 1,110 ft.; wtr.

Shell Oil Co., Inc.'s No. 1 Scaling, C of Blk. 87, J. H. Belcher Sur., 4 mi. S of Burns pool. Drlg. 4,420 ft.

Cottle County

J. E. Burns et al No. 1 J. E. Moss, Sec. 5, Blk. L, A. Forsythe Sur. Jnkd. 225 ft.; skid 20 ft. S.; S.D. 275 ft.

Hardeman County

Amerada Pet. Corp. No. 1 W. M. Rice, Sec. 81, Blk. H, W.&N.W. Sur. Drlg. 7,651 ft.

Carter & Taylor's No. 1 Norton, NW cor. 91-ac. tr. in Blk. 3, Robt. Young Sur., 16 mi. N of Quanah. S.D. 256 ft.

G. T. Kimble No. 1 M. T. Walling, SW¼ Sec. 368, Blk. H, H.W.&N.W. Sur., 5,500-ft. test. S.D. 530 ft.; titles.

Jack County

Harper Pet. Corp. No. 2 S. V. Vanhooser, Abst. 1926, J. W. Morrow Sur. T.D. 2,030 ft.; S.D.O.

Pitzer & West's No. 1 Sloan, Sec. 2786, T.E.&L. Sur. Spd. and S.D.

Montague County

Sackett and Continental No. 1 J. L. Brown, Sec. 58, E.T.R.R. S.D.O. 5,-046 ft.

Wichita County

Hanlon-Buchanan, Inc., No. 1 Fassett & Tuttle "F," D.L.&C. Sur. A-596. 6⅝-in. 4,040 ft.; L.&O.S. 4,061-92 ft.; shot 155 qt.; tstg. est. 100 bbl.; S.D.O.

J. R. Price and others No. 1 Hodges, NW¼ of Block 13, Burkburnett townsite, Thomas Redman Sur., Abst. 249, T.D. 1,710 ft.; 6⅝-in. 1,670 ft.; shot with 17 qt.; S.D.O.

Wilbarger County

Lawson & Leavell No. 16 W. T. Waggoner A, Sec. 109, H.&T.C. Sur., Blk. 14; 3,500-ft. test. T.D. 1,446 ft., sh.; S.D.O.

Rogers & Cavin No. 1 A. P. Morris, Sec. 3, Blk. 14, SW of Harrold. Drlg. 2,-340 ft.

Wise County

W. F. Holifield et al's No. 1 J. Redell, Rebecca Coleman Sur., Abst. 155, 2 mi. E of Bridgeport. Spd. and S.D.

H. M. Muse No. 1 F. F. Kaker, Blk. 16, Matagorda Co. Sch. Ld. Pits.

Young County

H. W. Dyer's No. 1 M. G. Cheney, M. L. Terry Sur., Abst. 1261. Loc.

Gentex Oil Co. No. 1 Burch, Abst. 1770, T. J. Burch Sur. Set 5½-in. at 4,145 ft.; T.D. 4,364 ft.; 5¼-in. 4,085 ft.; recmtd. and W.O.C.

Pitzer-West and Brazos-Young No. 1 F. Wray, Abst. 140, J. P. Hume Sur., 4,-500-ft. test. T.D. 4,685 ft.; P.B. 4,030 ft.; treating acd.

Stanley Thompson et al No. 1-A J. C. Vaughn, Blk. 3, T.&N.O.R.R. Sur., Abst. 1248; 4,250-ft. cable tool test. Drlg. 4,036 ft.

Taubert & McKee Drlg. Co.'s No. 1 Shanafelt, P. Pointevent Sur., Abst. 1309. 6⅝-in. 4,012 ft.; W.O.C.

EAST TEXAS

(Border Counties)

Cass County

G. Scott Hammond's No. 1 Price, C S½ W 40 acres, 125-acre tr., Chas. Ames Sur. 10¾-in. csg. 1,045 ft.; D.S. stk. 5,863 ft.

Marion County—Other

Otto Davis' No. 1 Hart, Gaines Coore Sur. Set 10-in. csg. 22 ft.; W.O.C.

M. D. Fitzwater No. 1 Mrs. Mary Duncan, Jesse Fitzgerald Sur. T.D. 2,558 ft.; swbd. and bailed dry; S.D.

J. M. Horn No. 1 W. Taylor, 450 ft. EL, midway N and SL, B.B.B.&C.R.R. A-54 Sur. Set 6-in. csg. 2,289 ft.; T.D. 2,313 ft.; pulled lnr.; C.O.

J. D. Reynolds' No. 1-B Terry est., W. Coore Sur. Set 4½-in. csg. 2,330 ft.; W.O.C.

J. D. Reynolds' No. 2-B Terry est., W. Coore Sur. Drlg. sdy. sh. 2,308 ft.

Marion County—Rodessa

Ark. La. Gas Co.'s No. 2 W. T. Neilson, 1,320 ft. N line, 620 ft. SE line, R. Bennington Sur. R.U.

Gulf Oil Corp.'s No. 2 C. W. Ray, 2,-825 ft. SL, 519 ft. WL, J. Hanks Sur. 13⅜-in. csg. 125 ft. and 9⅝-in. csg. 1,937 ft.; T. Gloyd 5,969 ft.; 5½-in. csg. 5,971 ft.; T.D. 6,008 ft.; W.O.C.

Panola County

Turner & Smith No. 1 Panola Dev. Co., 2,500 ft. NL, 1,000 ft. WL, Gillespie Sur. Set 10¾-in. csg. 6,000 ft.; 2 D.S. T.s 5,049 ft. failed; anhy. 4,950 ft.; por. L. 5,040-50 ft.. S.W.; drlg. 5,316 ft.

Shelby County

Natural Gas Dist. Corp.'s No. 1 W. B. Childress, 1,000 ft. W of Redditt & Gray's No. 2 Pickering, W. M. Snider Sur. Drlg. 1,420 ft.

W. H. Neel et al's No. 1 J. W. Hanson, C 64-ac. tr., A. Sanford Sur. R.U.

WEST CENTRAL TEXAS DISTRICT

Brown County

A. D. Bruce's No. 1 L. S. Mauldin, SW¼ Sec. 15, H.T.&B. Sur., Abst. 464. Drlg. 1,710 ft.

J. L. Derrich No. 1 C. V. Harris, Sec. 617, Prosper Mangle Sur. Temp. S.D. 2,125 ft.; prep. D.D.

Kynaston & Cullison's No. 1 L. A. Hill, SW Sec. 35, H.T.&B. Sur. Drlg. 472 ft.

C. C. Lockwood's No. 1 T. B. Landreth, SE cor. of Subdivision 2, J. Dickinson Sur. 10. Drlg. 729 ft.

Wilson Oil Co., Inc., No. 1 M. Bowden, Sec. 138, W. E. Gilliland Sur. Drlg. 1,609 ft.

Callahan County

Bayou Oil Co. No. 1 W. E. Jones, Sec. 84, Comal Co. Sch. Ld. Sur. Loc.

Dobbs Oil Corp. No. 2 Finley, Sec. 75, Bayland Orphans Home Ld. T.D. 2,104 ft.; moved off mach.; may move on rotary to D.D. (no report).

S. Henderson et al's No. 1 I. N. Jackson, SW¼ Sec. 20, E.T.R.R. Sur. Drlg. 467 ft.

T. S. Holden's No. 1 Nichols et al, 5 mi. SE of Cross Plains. Spud.

Kendrick & Van Zandt's No. 1 A. W. Johnson, SE cor. NE¼ Sec. 62, L.A.L. Sur. Drlg. 1,017 ft.

M. M. Little et al No. 1 W. P. Ledbetter, Sec. 4, NW M. Cherry Sur. Drlg. 1,373 ft.

J. L. Reeves et al's No. 1 P. G. Hatchett, NW¼ Sec. 30, D.&D.A. Sur. Drlg. 378 ft.

Hal Wagnon et al's No. 1 Wm. Isenhower, Sec. 304, Blk. 5, S.P. Sur. S.D.O. 550 ft.

Coleman County

B. Banner's No. 1 R. R. Powell, NW part of Moses Little Sur. No. 40. Loc.

Coleman Oil & Gas Co.'s No. 1 G. Powell, SE part of Moses Little Sur. No. 40. Drlg. 1,685 ft.

Cooper Oil Co.'s No. 1 J. P. McCord, Sec. 519, San Augustine Sur. T.S. 3,975 ft.; P.B. 3,975 ft.; flwd. 30 B.O.P.D.

Kynaston-Culberson-Culberson & Bozeman No. 1 J. P. McCord, Sec. 159, J. W. Meeks Sur. U.R. 10-in. 2,170 ft.

A. R. Pruitt No. 1 Y. B. Johnson, J. W. Hicks Sur., Abst. 265. Drlg. 450 ft.; no report.

Comanche County

J. W. Cawley et al No. 2 A. K. Anderson, SE Subd. 6, Lampasas C.S.L., Sec. 34, Abst. 608. S.D.; sd. 601-06 ft., may shoot.

Eastland County

J. L. Reeves No. 1 J. V. Parker, NW part of Wm. Van Norman Sur. Drlg. 2,611 ft.

W. A. Stiles et al's No. 1 H. F. Duncan, Sec. 10, Blk. 2, H.&T.C.R.R. Sur. Pits.

Dobbs Oil Corp.'s No. 1 Pierce, 330 ft. SL and 330 ft. EL of 214-ac. tract in Sec. 35, Blk. 2, H.&T.C. Survey. Drlg. 800 ft.

Erath County

Wayne Chandler's No. 1 Chandler, J. W. Moore Sur., Abst. 571. Fsg. 4,794 ft.

T. Gray's No. 1 C. Young Hrs., NW cor. of Stephen Smith Sur., Abst. 682. Drlg. 416 ft.

T. G. Jackson No. 1 J. W. Taylor, Prater Sur., Abst. 1029, 4 mi. NE of Desdemona. Drlg. 1,612 ft.

Haskell County

P. S. Kendrick No. 1 T. G. Hendrick, NW part of Sec. 1, A.B.&M. Sur. D.&A. 3,260 ft.

Jones County

Healey & Walters' No. 1 Warren, D. P. Rowland Sur., Drlg. 1,960 ft.

Jones & Stasney No. 1 Muehlstein, Sec. 28, D.&D.D. Lds. D.&A. 3,550 ft.

N. H. Martin & Sons No. 1 Wirt Davis, SW Subd. No. 7, F. M. Smyth Sur. No. 3. C.O. after shot 1,708-13 ft.; est 200 B.O.P.D.

Ungren & Frazier's No. 1 J. W. Barnes, N 80 acres of SE¼ Sec. 48, Blk. 15, T.&P. Sur. Drlg. 1,916 ft.

Nolan County

Green & Owens' No. 1 Tipton, Sec. 43, Blk. 19, T.&P. Sur. Sat. from 5,135-38 ft.; 116 B.O. in 2 hrs.; est. 450 B.O. P.D.

Plymouth Oil Co. No. 1 F. M. McClure, Sec. 49, Blk. 23, T.&P. Sur., 8,000-ft. test. Drlg. 4,118 ft.

Palo Pinto County

W. K. Gordon No. 1 W. R. Ringe, Sec. 81, Blk. 2, T.&P. Sur. Drlg. 2,411 ft.

Hickock & Reynolds No. 1 R. H. Gouldin, L. P. Elder Sur., Abst. 1474. Drlg. 2,378 ft.

Shackelford County

Fain & McGaha Oil Corp.'s No. 1 Dawson-Conway, SE cor. P. G. Holcomb Sur., Abst. 1424. Sat. from 1,441-97 ft.

J. L. Hart's No. 1 E. O. Beck, Sec. 159, B.B.B.&C. Sur. (outpost test to Ivy pool). Loc. (no report).

Honea, West & Yates' No. 1 Martin, NW outpost to Ivy pool. Flwg. 102 B.O.P.H. at 3,189-93 ft.

Owens-Snebold Oil Corp.'s No. 1 E. P. Olsen, SW¼ Sec. 163, B.B.B.&C. Sur. 1 mi. SW of Ivy pool. Loc. (no report).

Georgian Oil Corp.'s No. 1 Black ranch, C NE½ of T.E.&L. Sur. No. 390, 10 miles NE of Albany, Ordovician test. Loc.

Stephens County

Geo. E. Fagg No. 1 Richardson, Sec. 5, Blk. 31, S.P.R.R. Sur.; 4,000-ft. test. Drlg. 2,136 ft.

T. G. Shaw, Tr.'s No. 1 S. P. Stroud, NW¼ of G. Newton Sur., Abst. 128. Drlg. 710 ft.

A. G. Swanson No. 1 Veale-Frost, Sec. 37, Blk. 8, T.P. Sur. Drlg. 3,311 ft.

Stonewall County

L. Clark et al's No. 1 M. R. Neatherly, Sec. 53, Blk. D, H.&T.C.R.R. Sur. Drlg. 2,208 ft.

Shell Oil Co., Inc., No. 1 A. E. Smith, Sec. 143, Blk. 1, H.&T.C. Sur.; 6,000-ft. test. Drlg. 2,547 ft.

Taylor County

Sprotex's No. 1 A. L. Pittman, NW¼ Sec. 29, B.A.L. Sur. Drlg. 1,016 ft.

J. Howard Pew Has Ready Answers For His Cross-Examiners

PRES. J. HOWARD PEW, of Sun Oil Co., was subjected to a barrage of questioning by the Department of Justice battery and concentrating upon the pipe-line situation as it affects nonintegrated units, exclusive and split retail outlets, and the ½-cent per gallon price differential accorded exclusive dealers. "I do not know whether some pipe-line rates are too high or too low, but I am satisfied to let the Interstate Commerce Commission say whether they are or not," Mr. Pew said. "Pipe-line transportation is within reach of all who desire to use it. Every man cannot build his store on Fifth Avenue."

It would not follow, he said, that if pipe-line facilities "were equally available" that the nonintegrated units would show a greater production of refined products. He combated throughout the implication of his questioners that domination of the pipe lines by major units gives them domination of refining operations.

Sale of gasoline to exclusive outlets ⅛ cent cheaper than to split retailers evoked a welter of questioning. The witness countered with the higher operating expenses in making deliveries to split dealers.

Independent refiners purchasing crude oil in prorated areas are not purchasing in a market artificially controlled, Mr. Pew said. He "would like to see the industry operate absolutely upon the basis of supply and demand but also in accordance with the best conservation practice. This presupposes that reserves are sufficiently large and that there is a supply adequate to meet the needs of the country." He observed that the practices of state commissions in administering proration laws have an effect upon prices but this was not a controlling influence upon the market.

"I hate to admit it, but we have been in the red a good many years in our production department," Mr. Pew said. "Nothing would give me so much satisfaction as to buy every gallon of crude oil in a market under such conditions as now obtain."

Nonintegrated units in the industry had the balance of competitive advantage by virtue of their nonintegration, although the integrated companies did have an advantage in cheaper overhead expenses.

Dr. Isador Lubin, head of the Bureau of Labor Statistics, evinced interest, in questioning Mr. Pew, as to the reasons underlying the disposal of retail outlets. Avoidance of the burden of social security taxes was dimissed as the motivating consideration. Mr. Pew said this was a development of the N.R.A. days. Under the Blue Eagle experience, he related, strict adherence to the oil code by company-owned stations placed them at a disadvantage with chiselers who did not observe the code.

Mr. Pew had never heard of a "squeeze play" by major companies whereby the price of crude was arbitrarily increased while gasoline prices were depressed in an effort to hurt independent refiners. He would want to know about any such action and his company itself could defeat any such attempt.

Mr. Pew proved to be a very patient witness, under what at times appeared to be very exasperating circumstances. It was an interesting contrast to note that members of the committee who will draft legislation, if such results from the hearing, were considerably more tolerant of the witnesses than the departmental talent who transformed the inquiry into a witch hunt with much repetitious, inconclusive discussion. This finally reached the point where Vice Chairman Hatton W. Sumners, of Texas, took the matter into hand by telling committee counsel he "was anxious to have the investigation deal with concrete, usable information—not academic discussion."

The gamut of questioning covered a wide range, touching upon the patent licensing situation briefly; the acquisition of crude, and why the trend was toward integration in the face of the alleged higher profits available to independents. The Reading railroad dissolution litigation, when

Dr. Isador Lubin, head of Bureau of Labor Statistics, one of those questioning J. Howard Pew

the commodity-clause theory was used to divorce the hard-coal railroads' ownership of anthracite coal mines, brought the rejoinder from the witness that that was a horse of another color. It is a different matter when an industry owns a railroad from the situation of a railroad owning an industry, he pointed out. A decision of the U. S. Supreme Court several years ago so prohibiting the inverse application of the commodities clause against the U. S. Steel Corp. was cited by Mr. Pew. Other questions were whether there was any uniform policy agreed to among the big companies, and whether they operated any oil tankers under foreign registry.

Under questioning, Mr. Pew said it was probably true that independents would have to pay royalties to the major companies for the use of patents, but that cracking process development costs were greater than all the royalties ever obtained by the major units.

Whether refiners must own their own wells to be assured a supply of crude oil depends upon the size of the company. There always has been a feeling among some of his directors that they could not buy enough crude to supply their needs, but so far this has never been the case. "In my judgment we would be better off if we owned no wells." The company was continuing exploration work, meanwhile hoping it will not continue to lose money on producing wells. In 1936 Sun Oil Co. produced 13,000,000 bbl. of crude; bought 24,000,000 bbl. and sold 11,700,000 bbl. The quantity sold was mainly in areas adjacent to their own wells where it would have been uneconomic to transport small quantities. The 24,000,000 bbl. purchased in 1938 was acquired at prices below what it would have cost the company to produce it.

Vice Chairman Sumners: "What we really are charged with here is to find out if there is a monopoly, and if so, what caused it, and then what we should do about it."

Mr. Pew: "If this committee would undertake a study over the past several years to determine the number of independent operators who have gone into the oil business, the number who succeeded and the number of those who built it up over the last few years you could find out whether there is an opportunity for the independents. The surest way to destroy the petroleum industry is to adopt a cartel system."

Questioned about pipe lines, Mr. Pew said: "The whole problem here is one having to do with reasonable rates. The question has got to be studied in each particular case. Many pipe lines are losing money. . . . Proration has lengthened the life of pipe lines because it has had the effect of reducing costs through maintaining a more even flow. There have been some substantial reductions in rates in the last few years. The responsibility for these rates rests with the Interstate Commerce Commission."

The witness resisted the charge that major companies used excessive earnings on their pipe lines in other departments to the detriment of independent competitors. He maintained that there was no difference between earnings from pipe lines based on reasonable rates and earnings from any other investments owned by the companies in an activity unrelated to the oil industry, and that they are free to use such earnings as they please.

When counsel asserted that "the major companies have the lion's share of the pipe-line branch and as a result are in a strategic position on all competitive fronts," Vice Chairman Sumners interposed that if there has been no light on this subject it should be covered but that there was a substantial difference between a pipe line and a railroad. There is a difference so far as attracting capital goes, he said, to justify investment in a railroad there must be the assurance of permanent traffic and a variety of commodities to haul. Pipe lines must be able to attract capital and if producers wouldn't build them who would? "In considering the divorcing of pipe lines from oil producers you must decide who is going to build them. What is the answer? If the producers don't, will the Government build them?"

Mr. Pew said "a very definite thing makes a pipe line possible, i.e., that the builder has an assured supply at one end and a 'taker' of that supply at the other end. The pipe lines are profitable only if they are operated at capacity. Those operated at from 70 to 80 per cent of capacity incur losses."

Discussion of the reasonableness of pipe-line rates is academic, Mr. Pew told the Federal Trade Commission interrogator, since the sole responsibility lies with the I.C.C.

The extent of price cuts are determined somewhat, Mr. Pew said, by conditions existing in each territory. "We never cut prices to break into a new market. We cut prices in our established markets for the purpose largely of obtaining increased business throughout the whole territory. We get more business and so do our competitors because more people can afford to buy at a lower price." The pressure of competition from independent dealers is another element the company takes into account. "The amount of business independents take from us determines our course, not a desire to eliminate independent competition," Mr. Pew said. Other factors contributing to lower gasoline prices were a reduction in dealer's margin, and savings due to technological improvements, especially in drilling and refining. This occurred, he said, in the face of a higher price

for crude oil and wages over three times what they were in earlier years. Improvement in pipe-line operation through direct delivery rather than relayed or tank-to-tank pumping also was cited as a factor contributing to lower prices. The part which the price of crude plays in the price of gasoline is a very large one. The price of other products, however, he said, does not depend upon the price of crude but upon consumer demand, competition, etc.

Mr. Pew adverted to the effect developments in Illinois would have upon Sun's gasoline pipe line between Philadelphia and Cleveland. "We built that pipe line for the purpose of getting gasoline into the Ohio-Indiana-Illinois territory. As a result of the development of the Illinois fields the whole economic picture has changed and no longer will it be economically possible for us to use that line. We are going to ask the Interstate Commerce Commission to review that situation and determine a rate. I do not know what that rate should be, but I will be glad to lay it on their doorstep to find out."

During the questioning, Mr. Pew observed "there is machinery in the antitrust laws to enforce every proper purpose of that law and the Government should set up machinery to enforce those laws."

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Eastern States Officer Blames Pipe Lines and Proration

THE fifth day opened with testimony by Louis J. Walsh, vice president, Eastern States Petroleum Co., Inc., alternate for Richard B. Kahle, president, stressing the topics of pipe lines and proration, and laying the ills of independent refinery operators to these. Appearance of Mr. Walsh brought up the subject of expropriated Mexican crude. Mr. Walsh said his company was forced to seek a supply other than the East Texas field because of the high price of crude and high rates for pipe-line transportation. He said proration should be managed not from a price-control viewpoint but strictly as an engineering proposition. He was in favor of conservation.

Referring to the East Texas buying pool, he said, "The same squeeze play goes merrily along today"; its theory of operation has changed but the results are the same, i.e., price control of production instead of pooled buying.

Mr. Walsh told the committee the situation as to high crude prices and low prices for their products became serious in 1937. "We decided to do something about it and we went to Mexico." The Eastern States Petroleum Co., he said, began its operation on Mexican crude in August of 1938 after 9 months' search for American crude.

Replying to Leon Henderson, Securities and Exchange Commission, Mr. Walsh said it was not difficult to get crude but price was objectionable.

Questioning by Watson Snyder of the Department of Justice developed the opinion from Mr. Walsh that proration as now administered discourages independent operators to venture capital in exploring new oil lands. "Proration has had the effect of stopping independents from putting money into wells in Texas. Instead," he said, "they are going to Louisiana, Arkansas, Illinois, and New Mexico. There is no incentive to develop lands in Texas today because returns are too low under present allowables. The return is not high enough to justify the risks."

Another effect which proration has upon the independent, Mr. Walsh said, is impairment of his ability to raise capital funds.

Counsel asked Mr. Walsh why he was forced to go to Mexico for crude. "Because the price was low enough to operate at a profit. We have been running on it for over a year. We get it by tank steamer."

"Are transportation charges less than pipe lines?"

"Yes, on a mileage basis. It costs us 10 cents a barrel to move it from Tampico to Houston as against 17½ to 25 cents per barrel from East Texas."

Mr. Walsh said they operate under a bonded warehouse arrangement with government supervision on a 24-hour basis since they sell nothing in the United States and operate entirely upon Mexican crude. Their market outlets are in England and France, he said.

Leon Henderson asked Mr. Walsh whether the Shell company warned them not to buy oil from the Mexican Government which was taken from wells expropriated from them. Mr. Walsh said a Shell spokesman threatened to run them out of business. Mr. Walsh said their bankers told them they might encounter legal difficulties, such as attachment proceedings, if they took the Mexican crude.

"Has the war affected your business?" inquired Mr. Henderson.

"It has strengthened prices more than 1 cent a gallon or about 15 per cent," he answered. They have profited by the firming of prices due to the war, Mr. Walsh reported.

Chairman O'Mahoney took charge of the questioning of Mr. Walsh, especially as to the purchase of expropriated Mexican oil. Mr. Walsh replied that they had adopted this policy reluctantly. He said the major companies would not buy from them now, but that theretofore they had been selling to virtually all of the major companies. The Mexican Government, he said, did not touch the oil lands of companies which conformed to the labor laws, and the Mexican Government has its own wells so that there are in fact two kinds of Mexican oil.

Mr. Walsh told Chairman O'Mahoney that his company had suffered losses before its Mexican venture due to the increase in the price for crude and the absence of corresponding increases in the prices of refined products. This increase in crude prices the witness attributed to proration, and the pipe-line control exercised by the majors.

The troubles of the industry as outlined by Mr. Walsh were attributed to "ill-considered emergency federal legislation." Most of the difficulty comes from the fact that the Connally hot-oil act is founded upon proration laws which are unsound.

Mr. Walsh said he wants Congress to take complete control of the regulation of the industry, i.e., (1) extension of federal control and price fixing to include control of refineries and marketing, and (2) elimination of price fixing by dissociation of oil production, transportation, refining, and marketing. His primary suggestion, Mr. Walsh said, is that proration be placed upon an engineering basis instead of the 10 per cent conservation and 90 per cent price-fixing basis as at present.

Discussion of the mechanics of proration led to a general argument as to the merits of the Bureau of Mines' monthly forecast. Chairman O'Mahoney asked Mr. Walsh: "Should it not be done?" Mr. Walsh replied: "No."

Senator O'Mahoney: "Is it done in compliance with a law?"

A. "No."

Q. "If it is not done, then what?"

A. "Go back to the law of supply and demand as the business operated for years."

Q. "What effect would that have on conservation?"

A. "None."

Q. "What effect would it have on conservation and the amount of oil recoverable?"

A. "No petroleum is wasted."

F. E. Berquist of the Department of Justice counsel asked Mr. Walsh whether "if the best engineering principles were applied and optimum production were obtained, would the total petroleum production be more or less.

"More," replied the witness, "by 25 or 30 per cent."

Mr. Henderson interjected: "What you are saying is that what the Bureau of Mines estimates are based upon are not efficient production methods but upon market demand." Answer: "That's it; an engineering basis is not used."

Chairman O'Mahoney: "Does it all hinge on the Bureau of Mines forecast or is it some other factor?" Mr. Walsh replied that if there were no bureau forecast the states would arrive at their own figures.

The refinery executive said the September forecast of demand was based upon August consumption and did not take into account the changed price situation, reductions, which always stimulate consumption. He said he had noticed this recently in the case of fuel oil.

●

Fell and Brown Offer Testimony Presenting I.P.A.A. Views

THE presentation of the Independent Petroleum Association of America was contained in a brief submitted under the name of Harold B. Fell, executive vice president, supplemented by oral testimony by Russell B. Brown, counsel.

Mr. Brown's discussion moved Leon Henderson, S.E.C. commissioner, to remark as to the contrast between the presentation of the independents and that of the American Petroleum Institute group. "Mr. Pew was very strong in his statement that there was no situation in the industry which requires government intervention, whereas your group is asking for the extension of government intervention," he said. Mr. Brown replied that probably their attitude reflected an unconscious reaction as influenced by the difference in their respective positions, i.e., "the attitude of a big company as distinguished from that of a smaller organization."

Mr. Brown expressed belief there was a feeling among independent producers that the integrated companies were using earnings from their pipe lines for a competitive advantage in other departments. "We do not feel a divorcement is the answer, however," he said. Counsel thought the pipe-line situation could be worked out, possibly, by earmarking earnings from that department and restricting their use to the production department only. Mr. Brown said they had suggested to the Securities and Exchange Commission that they re-

quire oil companies, in reporting earnings, be compelled to segregate pipe-line earnings from earnings of other departments.

"There are many problems in the oil industry which could be worked out if there was some agency of government to serve as a federal umpire," said Mr. Brown. Intraindustry agreements were cited as one of the chief means of getting at these problems. Mention of this, however, evoked committee reaction on price fixing. Counsel explained the producers are fearful of considering joint action along various lines lest they expose themselves to antitrust liability.

Among the principles which might be made subject to agreements within the industry, Mr. Brown listed the following:

1. Effective utilization of natural reservoir energy in all new fields.

2. Prevention of uneconomic aboveground stocks of petroleum and products.

3. Assurance of permanent, effective balance of supply with demand.

4. Establishment and maintenance of equitable proration, within and between oil pools.

5. Elimination of unnecessary and unprofitable drilling.

6. Protection of the "stripper" wells.

7. Establishment of a proper basis for determining price.

8. Elimination of the subsidizing of losses in one branch of an integrated company with the profits from another.

9. Establishment of rules making possible sound and ethical practices in the marketing division of the industry.

10. Assurance to small refiners of access to supply of raw material as well as access to market.

"The fears which our members have of antitrust liability," Mr. Brown concluded, "prevents the lambs from organizing against the wolves."

Committee counsel, Hugh M. Cox, of the Department of Justice, pursued his questioning of Mr. Brown as to the price-fixing implications of an agreement to determine prices. "What's the difference between a price-fixing agreement and an agreement to determine prices?" he asked. Mr. Brown explained that what they were interested in is stability in crude prices. "We want a basis to calculate what a barrel of crude is worth. Such an agreement would not fix a minimum price but might prevent prices less than the cost of production," he said. "We think the price of crude oil ought to reflect first the cost of production. We have the feeling that the price of crude is determined through a process something like this: They go into a competitive market, spend money improvidently and do not care what they get for gasoline because they take off the cost of marketing, transportation and refining and give us what's left."

Mr. Brown said that while he does not think price fixing is desirable, production controls are all right. "Independent producers do not enter into the determination of price for their own product." Assurance to small refiners of access to a supply of raw material could be worked out, in Mr. Brown's opinion, along the lines of the formula under the final period of the N.R.A. when this was accomplished through quotas. "It is the opinion of many independent producers that the industry runs excess products through the refineries for the purpose of depressing the market." He added that there is no conscious fixing of the price of crude oil.

In response to inquiry from the Department of Commerce panel Mr. Brown declared that "a very small amount of independent production goes to independent refiners. . . . In the last 2 or 3 years more and more of the independent production is being sold to the major companies." Replying to another query he said: "We feel crude ought to be priced on a known basis beginning with the cost of production and working it up from there."

• pipeline ?
• pipe-line
• pipe line •

This word may be written in three different ways. Which is correct? The answer to this question and the forms for hundreds of other compound words may be found in the

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Questioning of Karl A. Crowley Develops Several Issues

WHILE divorcement of pipe lines was the main subject of Karl A. Crowley, attorney, Fort Worth, Tex., the ensuing questioning produced a variety of opinions upon a number of industrial topics. Proration no less than the evils of the dual situation resulting from pipe-line ownership received its share of bitter denunciation and abuse from the Texas attorney.

Ever since the dissolution of the Standard Oil trust the question of monopoly in the oil industry has been before the country, he said. "The only difference today is that we now have a great cartel. The oil industry has varied its activities since those days and is now resorting to fake conservation under proration laws, and control of pipe-line rates." The witness said he does not favor abolishing proration although he does feel that it is now being used to control production and fix prices. He charged that the reason majors back present proration practices is because the supplies of new oil "have been a threat to the monopoly of the big companies."

Referring to the bill to extend federal control over the industry, he said: "I am opposed to that bill and I do not think a single independent producer in the United States is for it. The bill virtually would require a certificate of public convenience to drill a well or open a filling station in Ottumwa, Iowa."

He declared that Texas is the only state wherein the Connolly Act is being enforced. "Thousands upon thousands of barrels of hot oil have been shipped out of Louisiana," he said. Mr. Crowley rejected forthrightly the allegation that the "independents are the hot-oil runners." Out of the 104,000,000 bbl. of hot oil run out of East Texas, said Mr. Crowley, only 5,000,000 belonged to independents. "Who owned the other 99,000,000 bbl.?" he asked with emphasis.

"Our oil supply is supposed to be based upon market demand but it is fixed by major company nominations," he declared. "Production is based upon price solely."

Explaining what he called the price squeeze, he said the independent refiner has to dump on the open market all gasoline for which he has not previously contracted, and the major refiners are constantly expanding and constantly putting through increased amounts of crude oil and then reducing their wholesale price for the announced purpose of "meeting independent refiners' competition." "Thus it can be readily seen," he continued, "that the independent refiner with the added burden of price differential on his crude cannot survive. The major is not particularly affected because what it loses in one branch of the industry it makes up in another. The majors are keeping the volume low and prices high in East Texas. The squeeze of 1921 is the squeeze of 1938 and 1939."

Chairman O'Mahoney interjected that an increase in the price of crude which would be highly pleasing to the independent producer would be displeasing to an independent refiner. "What I am driving at," said the senator, "is whether or not in your opinion the difficulty the independent refiner finds himself in is due to the fact that he is operating in a small area and competing with the majors who operate in large areas?"

Leon Henderson interrupted to the effect that

NOT OF SOUTHPORT COMPANY

President Cornelius Kroll of Southport Petroleum Co., Houston, Tex., calls attention to an error in the T.N.E.C. description of M. M. Travis as president of that company and wishes it known that statements by Mr. Travis must not be attributed to the Southport company, with which Mr. Travis is not connected.

virtually every witness presenting the independent viewpoint has charged price fixing, price rigging, etc., but that to date none had actually produced any convincing evidence of this.

In support of his claim of price fixing, Mr. Crowley referred to Texas hearings. "The majors 'intimated'," he said, "what they would do about keeping up the price of crude. The commission following the 'recommendations' of the majors, and no sooner had the 'recommendations' of the majors been followed by the commission issuing its order suspending hearings and ordered continuation of the present plan of allowables and a 2-day shutdown, than the majors began to overload their refineries, producing so much gasoline as to threaten to disrupt the market."

Mr. Henderson observed that "you can have a squeeze from a set of conditions as a result of control and where there is no control, as a result of competition."

Chairman O'Mahoney again took up the adequacy of the showings under the charges of price rigging. "I do not say that the majors meet around a table and agree on crude prices," said Mr. Crowley. Chairman O'Mahoney then observed that: "When the committee comes to study the evidence produced here it cannot rely upon belief but must have facts."

Continuing another of his clarifying summaries of the hearing when the haranguing appears to have befogged the picture, Chairman O'Mahoney said:

"There are four principal interests in the petroleum industry: (1) production, (2) refining, (3) distribution, and (4) the consumer. So these four must balance against one another. It is quite obvious that any set of circumstances for the producer and the refiner tends also to increase the price for the consumer and more profit for the industry. The question is 'Is there some other more equitable and just system than that now operating?' "

Attorney Crowley interposed at this point that "one of the worst things about the whole business is the control of the pipe lines by the majors. They can and do use these inordinately and unconscionably high profits to cushion losses in other departments of the industry."

Chairman O'Mahoney inquired whether the conditions causing so much complaint are caused by definitely antisocial actions of private interests or as a result of integration. Mr. Crowley expressed the belief that "there are some common understandings." The senator then differentiated as between the different kinds of monopolies, such as natural monopolies, patent monopolies, etc. Continuing, the senator posed the question whether the situation complained of is "the fault of the system or of agreements." "They have identical practices," said Mr. Crowley. By that, he explained, "under either the system or the agreements the integrated companies possess the power to control." Insisting that they should be divorced, Mr. Crowley maintained that they cannot declare the industry a public utility. "They should not be able to use the profits from one department in another unrelated department."

Chairman O'Mahoney remarked: "It is perfectly

(Continued on Page 111)

Summary of California Oil Field Operations, July 1939

According to figures collected by the American Petroleum Institute, the total production of crude oil in California for July amounted to 18,803,140 bbl., an average of 606,553 bbl. per day. This is a decrease of 823 bbl. per day under June production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 613,653 bbl. The total stocks at the end of the month were 158,846,468 bbl. The total stock increase for 1939, up to July 31, was 1,162,179 bbl.

Seventy-nine wells were completed during the month with an initial daily production of 71,168 bbl., compared with 59 wells completed during June, with an initial production of 46,736 bbl.

CRUDE PETROLEUM PRODUCTION

(Figures of production and stocks are in barrels of 42 gal.)

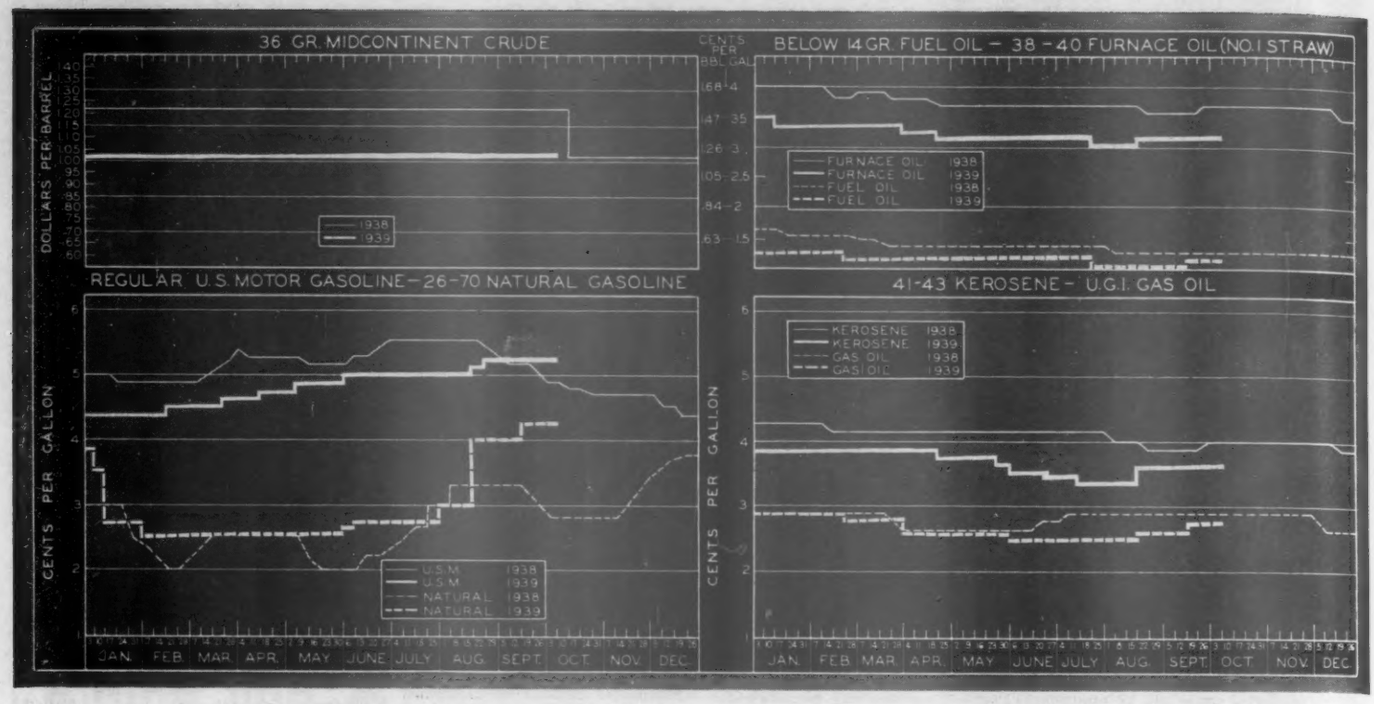
Group No. 1—	Total production July	Daily average July 1939	Daily average June 1939	Daily average July 1938
Arvin	42,340	1,366	944	.....
Belridge—North	367,110	11,842	12,042	11,602
Belridge—South	35,164	1,134	1,128	1,033
Canal	171,137	5,521	5,234	2,441
Canfield Ranch	3,168	102	52	107
Coalinga	593,432	19,143	13,490	9,964
Cole's Levee	25,855	834	686	.....
Edison	70,273	2,267	2,276	2,691
Elk Hills	331,072	10,680	10,605	10,541
Fruitvale	191,725	6,185	6,406	7,552
Greeley	70,269	2,267	1,980	3,291
Kern River	352,641	11,375	10,950	11,547
Kettleman Middle dome	864	28	29	49
Kettleman North dome	1,623,982	52,386	52,513	66,363
Lost Hills	101,825	3,285	3,153	3,708
McKittrick	113,366	3,657	3,715	3,131
Midway-Sunset	1,560,102	50,326	52,486	59,015
Mountain View	253,494	8,177	8,446	9,905
Mount Poso	344,302	11,106	11,130	15,760
Rio Bravo	241,840	7,801	7,638	5,640
Round Mountain	259,320	8,365	8,530	14,564
Strand	7,690	248	203	.....
Ten Section	284,884	9,190	9,039	6,949
Tupman	14,939	482	492	.....
Wasco	37,746	1,218	1,129	386
Wheeler Ridge	10,023	323	330	309
Group No. 2—				
Capitan	72,177	2,328	2,416	2,804
Elwood	126,944	4,095	3,824	5,781
Rincon	77,916	2,514	3,733	4,351
San Miguelito	78,186	2,522	2,464	2,399
Santa Barbara	9,934	321	297	405
Santa Maria	630,394	20,335	19,771	11,925
Summerland	992	32	26	28
Ventura Avenue	1,137,781	36,703	38,754	35,127
Ventura-Newhall	199,807	6,445	6,196	5,052
Watsonville	930	30	30	35
Group No. 3—				
Brea-Olinda	176,619	5,697	5,771	5,818
Coyote—East	79,766	2,573	2,540	3,413
Coyote—West	310,439	10,014	9,378	8,480
Dominguez	545,366	17,592	17,979	23,772
El Segundo	92,463	2,983	3,187	9,431
Huntington Beach	783,392	25,271	26,491	32,303
Inglewood	395,497	12,758	12,725	14,179
Lawndale	1,466	47	33	90
Long Beach	1,399,526	45,146	45,743	58,122
Los Angeles-Salt Lake	15,480	499	482	543
Montebello	576,883	18,609	20,068	10,719
Playa Del Rey	153,878	4,964	5,127	6,138
Potrero	34,096	1,100	1,131	802
Richfield	272,793	8,800	8,970	8,959
Rosecrans	333,535	10,759	11,507	10,482
Santa Fe Springs	849,462	27,402	27,509	32,840
Seal Beach	213,838	6,898	7,025	8,651
Torrance	520,428	16,788	18,093	16,192
Whittier	29,450	950	970	925
Wilmington	2,575,159	83,070	80,510	94,768
Total July	18,803,140	606,553	607,376	661,082
Total June	18,221,295	607,376		
Decrease (*increase)	*581,845	823		

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	July 31, 1939	June 30, 1939	July changes	Dec. 31, 1938 (Reclassified)
1. Gasoline-bearing crude	38,200,974	38,806,186	—605,212	36,225,312
2. Nongasoline-bearing crude	14,390,754	14,206,766	+183,988	16,282,177
3. Unblended natural gasoline	2,352,460	2,396,219	—43,759	2,699,455
4. Gasoline (not including distributing and service stations)	13,775,601	14,129,499	—353,898	13,259,369
5. Naphtha distillates	*1,360,988	*1,574,503	—213,515	*1,566,349
6. Gas oil and diesel oil	10,071,238	10,333,510	—262,272	10,539,937
7. Fuel oil residuum	71,275,300	70,841,319	+433,981	70,957,881
8. All other stocks	†7,419,153	†7,172,119	+247,034	†6,153,809
Total	158,846,468	159,460,121	—613,653	157,684,289
*Estimated amount of unfinished gasoline contained in item No. 5	1,122,574	1,310,625		1,350,379
†Coke included in item No. 8	361,629	284,089		92,066

OIL FIELD DEVELOPMENT

Group No. 1—	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abd. wells—Drillers	Abd. wells—Producers
Arvin	0	5	2	4,230	4	0	0
Belridge—North	2	3	2	674	69	0	0
Belridge—South	0	0	0	0	86	0	0
Canal	1	2	2	3,492	25	0	0
Canfield Ranch	0	0	0	0	1	0	0
Coalinga	4	12	3	9,587	862	2	3
Cole's Levee	3	3	2	2,820	6	0	0
Edison	0	1	1	50	88	0	1
Elk Hills	0	0	1	50	171	0	0
Fruitvale	3	5	0	0	172	1	1
Greeley	1	4	1	3,800	18	0	0
Kern River	0	2	1	10	1,415	2	0
Kettleman Middle dome	0	0	0	0	3	0	0
Kettleman North dome	4	12	6	13,347	220	0	1
Lost Hills	0	2	0	0	282	0	0
McKittrick	0	0	0	0	199	1	1
Midway-Sunset	1	6	2	80	2,574	2	3
Mountain View	1	1	0	0	182	0	0
Mount Poso	0	0	0	0	281	0	0
Rio Bravo	1	2	1	3,080	32	0	0
Round Mountain	6	6	1	75	207	0	0
Strand	2	2	0	0	1	0	0
Ten Section	1	1	1	2,414	33	0	0
Tupman	0	1	0	0	2	0	0
Wasco	0	1	0	0	6	0	0
Wheeler Ridge	0	0	0	0	33	0	0
Group No. 2—							
Capitan	0	0	0	0	46	0	0
Elwood	0	0	0	0	81	0	0
Rincon	0	1	0	0	52	0	0
San Miguelito	0	2	0	0	20	0	0
Santa Barbara	0	0	0	0	27	0	0
Santa Maria	2	4	0	0	303	2	0
Summerland	0	0	0	0	19	1	0
Ventura Avenue	4	13	4	3,613	279	0	0
Ventura-Newhall	2	7	2	1,924	550	1	1
Watsonville	0	0	0	0	7	0	0
Group No. 3—							
Brea-Olinda	1	1	0	0	356	0	0
Coyote—East	1	1	0	0	78	0	0
Coyote—West	0	0	1	351	67	0	0
Dominguez	1	1	2	1,510	162	0	0
El Segundo	0	0	0	0	50	0	0
Huntington Beach	1	4	3	580	539	0	2
Inglewood	0	0	0	0	216	0	0
Lawndale	0	0	0	0	6	0	0
Long Beach	1	5	1	10	1,216	2	5
Los Angeles-Salt Lake	0	0	0	0	111	0	0
Montebello	19	40	10	9,505	257	0	0
Playa Del Rey	1	0	0	0	174	0	3
Potrero	0	0	0	0	14	0	0
Richfield	0	1	1	25	296	1	0
Rosecrans	2	5	3	514	134	2	0
Santa Fe Springs	0	0	0	0	579	0	2
Seal Beach	0	0	0	0	106	0	3
Torrance	1	2	1	110	720	2	3
Whittier	0	0	0	0	150	0	0
Wilmington	15	16	21	9,337	686	0	0
Miscellaneous drilling	8	29	0	0	0	8	0
Group No. 4, gas fields—							
Buena Vista Lake	0	0	0	0	1	0	0
Buttonwillow	0	0	0	0	0	0	0
Chowchilla	0	0	0	0	0	0	0
Delano	1	0	3	gas	1	0	0
Dudley Ridge	0	0	0	0	0	0	0
Goleta	0	0	0	0	0	1	0
Marysville Buttes	0	0	1	gas	3	0	0
McDonald Island	0	0	0	0	0	4	0
Rio Vista	0	0	0	0	21	0	0
Semi-Tropic	0	0	0	0	0	0	0
Tracy	0	0	0	0	0	0	0
Total July	90	203	79	71,168	14,303	28	29
Total June	93	191	59	46,736	14,044	23	32
Increase (*decrease)	*3	12	20	24,432	259	5	*3



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Lube Oils and Wax Touch New Highs In Group 3, But Gasoline Lacks Life

By T. F. SMILEY

LUBRICATING oils and wax continued their upsurge in the Group 3 market during the past week, and natural gasoline relinquished none of its advanced ground. The rest of the list did nothing to earn any ribbons, though the heating oils were moving into better position and heavy fuels exhibited rising strength.

The trade was a little disappointed over the performance of motor fuel. Low-octane material was weaker, and the other grades lacked the vigor which they had been expected to develop. Various conditions contributed to backwardness in this division. There were still some who contended an advance in tank-wagon prices would be followed promptly by increased tank-car quotations, but confidence on this point was waning.

Seasonal Decline Starts

Although consumption has fulfilled expectations, it has entered its seasonal decline. Whether European war conditions will create wider markets for this country's gasoline remains to be seen. They haven't done it yet. There was general agreement among refiners that the nation's huge stocks and the mounting runs to stills were an impediment to a healthy market, but not much concern was evident. There apparently was a feeling that as the war develops it will make heavy drafts on supplies in the United States.

Underpriced gasoline made from cheap Illinois crude plays a part in the Mid-Continent refiner's troubles. Third-grade material, made by small refiners from Illinois crude, was reported sold in Minneapolis last week at 4 cents, a half cent below published prices. Another condition operating as a depressant is the difficulty in making oversea deliveries of gasoline, orders for which may not have grown out of the war at all. Material shipped to the Gulf in recent weeks, supposedly for export, is reported to be still there. Some has been moved coastwise, but not enough to remove congestion at the Gulf.

Notwithstanding difficulties in the path of gasoline, the market was fairly steady in Oklahoma, and some refiners were buying to supplement their own production.

Lubricating oils, export and domestic, advanced another cent, raising prices to the highest level touched since 1934. In that year bright stock grade 150-160 D, 15-25 pour point, commanded 22½ cents. This week the price was 20 cents. In 1929 that grade hit 37½ cents.

Wax was increasingly hard to get, and the 124-126 crude scale was quoted at 4¼ cents, an advance of three-quarters of a cent. Most of the demand, like that for the lubricants, was for export movement, though domestic needs were substantial. One carload, shipped just before the price increase, was sold in the domestic market at 4 cents.

Sellers' Market in Naturals

Natural gasoline presented a sellers' market. Field stocks were at a low point. One manufacturer declared it probably would be impossible to find 25 cars available for immediate spot shipment. Refiners at the Gulf, because of inadequate supplies of natural, experienced embarrassment recently in responding to foreign inquiries for gasoline, and they have adopted the practice of laying in reserves. The buying prompted by this procedure has had a stabilizing effect on the natural gasoline market. When stocks of motor fuel now at Gulf Coast points begin to move oversea there automatically will be further increase in the demand for natural. One cargo inquiry was in hand this week.

Buying of heating oils for winter use is gathering volume, stimulated in the past week by cold waves. Prime-white distillate was especially strong. Prolonged summer weather in the North delayed the seasonal demand for furnace oils this year. Tractor fuels were moving in fair quantity

Refined Oil Market Barometer

Failure of oversea business to develop has caused softening of gasoline, but confidence is expressed that foreign demand will appear eventually. Lubricating oils commanding highest prices since 1934 and pointing upward. Wax stocks sold up. Demand for heating oils delayed by prolonged warm weather, but strong market is predicted. Natural gasoline strong.

MID-CONTINENT. Lubricants and wax up. Gasoline somewhat softer. Heating oils firm.

EAST COAST. Gasoline gaining. Furnace oils active. Wax extremely vigorous.

GULF COAST. Gasoline slightly weaker. Kerosene steady. Lubricating oils firm.

CALIFORNIA. Naturals soft. Diesel, gas oil and fuel stronger. Export prices up.

PENNSYLVANIA. Gasoline up. Fuel oil off. Wax buoyant. Lubricating oils holding.

CHICAGO. Gasoline strong, with stocks rather closely held. Heating oils firm.

Advance in Petroleum Markets on Atlantic Coast Continues

By H. STANLEY NORMAN

NEW YORK, Oct. 3.—The upward movement of petroleum markets along the northeastern seaboard continued in the past week. Higher prices were asked by most refiners and distributors for motor fuel, burning oils, and lubricating stocks. There were a few sources at which 65-octane gasoline could be obtained at 6½ cents, but most of the New York and Philadelphia business is on a basis of 6¾ cents.

Gulf Coast refiners also were asking higher prices, but were not anxious sellers, according to information in New York. Conditions are still unsettled on the Gulf with refiners generally preferring to hold their stocks until the upward price curve starts to flatten out. This situation is largely the result of inability to gage accurately the demand from European belligerents. The war so far has failed to develop demand much above normal levels. However, it is just a matter of time, American refiners realize, until stocks in Germany, Great Britain, and France will require replacement.

Boats are still extremely difficult to charter, and rates are holding at the high levels reached in the preceding week. One tanker was reported in the New York market to have been chartered for a trip to France this month at $10 per ton, the owner to pay war-risk insurance. Norwegian boats are still unavailable for traffic with belligerent nations, and this has placed a severe strain on regular trips to France and England. Adjustments are being made, however, to use the available Scandinavian-owned tonnage in service other than with belligerents, and cargoes are beginning to move with greater freedom. A cargo of 67-octane, 400-endpoint gasoline was reported sold on the Gulf last week for October shipment at 6½ cents per gallon. Aviation gasoline is still difficult to find on the Gulf and 73 unleaded motor fuel probably would cost exporters around 7¼ cents.

Pennsylvania lubricating oils continued their upward climb last week, with several transactions reported at around 30 cents per gallon for both bright stock and neutral material. Western Pennsylvania refiners were shipping only limited quantities of lubricating oils to contract customers. Hardly without exception refiners are extremely low on lube stocks, and most plants are running 2 to 3 weeks behind business already booked. Export demand for Pennsylvania lubricants has been stimulated by the outbreak of war, indicating that reserves of this material in France and England were not in proportion to fuel oils and gasoline. Current prices for Pennsylvania lubricating oils are the highest in a decade. Advances of 2½ to 5 cents were reported last week on most grades.

Cooler weather in New York and New England last week caused another bulge in fuel-oil demand. Most sellers in the New York Harbor area were asking 4⅜ cents per gallon for No. 2 fuel oil in tank cars at the end of last week and kerosene generally was quoted at 4⅞ to 5 cents. Demand for No. 2 fuel oil is starting off the season at a faster pace than in preceding years.

All refiners in this district are holding Bunker C fuel oil at $1.15 per barrel and tank-wagon sales of industrial fuel are mostly at a range of 3½ to 3.8 cents. The market for heavy oils is strong, and buyers frequently report difficulty in finding material. The feeling is general among refiners that demand from the French and English navies will develop in the near future.

Information reached New York last week that France will impose restrictions on civil consumption of gasoline by or before the middle of October. Private cars will be limited to 10 gal. of fuel per month, according to information received here. It also was reported that France would continue to look to the private refining and importing companies for the nation's petroleum, including quantities required by the army and aviation corps. This development will mean, according to oil men, that no commission for buying will be created so long as the private companies are capable of meeting the nation's demands.

The movement of tankers in trans-Atlantic service is being more carefully concealed now than during the first few weeks of the war. The opinion is general that the British Navy is convoying tankers through the zones of danger. No recent tanker losses have been reported, indicating that elaborate care is being taken to move them safely through the areas in which submarines are believed to be operating.

The domestic coastwise charter market is slightly stronger, with owners currently asking 30 cents for Gulf to north-of-Hatteras. The last fixture for this trip reported in New York was at the rate of 28 cents per barrel.

Gulf Coast Markets

HOUSTON, Tex., Oct. 3.—Breaking the solid front of strength maintained by refinery markets on the Gulf Coast the past month, gasolines developed a slightly weaker tone in the past week, with prices slipping about a quarter of a cent on all grades. Kerosenes also appeared a little easier, but maintained a strong position. None of this sagging, however, was evident in gas oils, diesel oils or fuel oils, which products continued practically unobtainable either for present or early future delivery.

The weakening of gasolines was in face of the fact that material still was not plentiful. The majority of sellers are fairly well sold up or in fair position to hold, but it is becoming evident that continued failure of new business to materialize as a result of the European war is being felt. Some of the recent advance in prices was in expectation of this demand, and supporting new business is needed to manitain the higher prices.

Gulf Coast refiners continue confident that a large export demand is waiting for them when the problem of moving the oil is overcome, but are fearful that there will be a tendency to increase operations and build up stocks and that the present favorable position resulting from the recent production shutdown will be lost before the demand arrives.

Kerosene held firmly at a low of 4½ cents, but more material was offered at this figure than during the preceding week, when the product was practically unobtainable. Gulf Coast Refiners Association standard specification material, however, was quoted firmly at 4⅝ to 4¾ cents.

The tight situation in gas oil, diesel oils and fuel oils is being maintained by continued strong domestic demand for eastern industrial use. Practically all suppliers are completely sold up. With docking schedules getting back to normal at various Gulf Coast ports, bunker oil is closely held, forestalling any immediate weakening of this market. Ninety cents is absolute bottom on this material, with some sellers getting up to $1.

Although not generally quoted, and not readily available, a cargo of aviation gasoline was moved last week at 8½ cents, a new high price. No sales have been made since.

A. P. I. Weekly Refinery Statistics

Week Ending September 30, 1939

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	561,000	18,545,000	12,530,000
Appalachian	85.9	122,000	2,519,000	611,000
Indiana, Illinois, and Kentucky	90.2	507,000	10,931,000	6,756,000
Oklahoma, Kansas, and Missouri	81.6	271,000	5,838,000	4,600,000
Inland Texas	50.3	116,000	1,505,000	2,305,000
Texas Gulf	90.0	854,000	9,116,000	13,222,000
Louisiana Gulf	97.6	126,000	2,113,000	3,061,000
North Louisiana and Arkansas	55.0	53,000	355,000	821,000
Rocky Mountains	54.2	47,000	1,062,000	650,000
California	90.0	546,000	14,224,000	93,309,000
Total reported	86.2	3,203,000	66,208,000	137,865,000
Estimated unreported	.....	357,000	4,960,000	3,265,000
*Estimated total	.....	3,560,000	71,168,000	141,130,000
*Estimated total previous week	.....	3,570,000	71,020,000	140,969,000
*October 1, 1938	.....	3,233,000	69,086,000	151,226,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ending September 23, 1939	232,811,000 barrels
Week ending September 16, 1939	233,016,000 barrels
Week ending September 24, 1938	280,278,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of October 3, 1939

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank wag.
Chicago, Ill.	15.1	13.1	4.0	10.0
Decatur	15.1	13.6	4.0	10.0
Joliet	15.1	13.6	4.0	10.0
Peoria	15.1	13.6	4.0	10.0
Quincy	14.9	13.4	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	†10.0
Des Moines	14.9	13.4	4.0	†9.8
Mason City	15.3	13.8	4.0	†10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	‡6.5	15.0	5.0	9.4
Minneapolis	16.5	15.0	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.4	5.0	10.0
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich.	13.6	12.1	4.0	7.1
Grand Rapids	13.5	12.0	4.0	9.7
Saginaw	15.8	13.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†10.7
South Bend	16.8	15.3	5.0	†10.0
Fargo, N. D.	17.7	16.2	5.0	11.6
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.9	4.0	8.0
St. Louis*	14.7	13.2	4.0	8.0
St. Joseph	14.4	12.9	4.0	7.9
Wichita, Kans.	13.3	10.6	4.0	7.4

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes. Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective September 18, 1939, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gal., 9 cents; 100-149 gal., 8 cents; 150 gal. and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gal., 8.25 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex furnace oil, 1-149 gal., 8.25 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex Grade A, 1-399 gal., 5.25 cents; 400 gal. and over, 4.25 cents. Stanolex Grade B, 1-799 gal., 5.25 cents; 800 gal. and over, 4.25 cents. Stanolex Grade C, 1-999 gal., 4.5 cents; 1,000 gal. and over, 3.5 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Tank-wag. cons'r.	Dividved dlr.	Inc. tax	Kero. tank wag.
Ohio points	15.5	14.5	5.0	*13.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			
	Cons'r. tank car	Dlr. tank wag.	Inc. tax	Kero. tank wag.
Atl'tic City, N. J.	11.6	12.7	4.0	7.25
Newark	11.6	12.7	4.0	7.25
Annapolis, Md.	12.85	14.35	5.0	9.5
Baltimore	12.25	13.75	5.0	7.0
Cumberland	13.65	16.15	5.0	10.0
Wash'gton, D. C.	10.50	12.0	3.0	9.5
Danville, Va.	14.45	16.95	6.0	12.9
Norfolk	13.25	15.75	6.0	8.5
Petersburg	13.55	16.05	6.0	11.7
Richmond	13.55	16.05	6.0	10.7
Roanoke	14.75	17.25	6.0	11.0
Charles'n, W. Va.	14.05	16.55	6.0	12.6
Parkersburg	13.35	14.85	6.0	11.2
Wheeling	14.35	15.75	6.0	12.2
Charlotte, N. C.	15.40	17.90	7.0	11.8
Hickory	15.95	18.45	7.0	12.3
Mt. Airy	15.80	18.50	7.0	12.2
Raleigh	15.15	17.65	7.0	11.5
Salisbury	15.45	17.95	7.0	11.9
Charleston, S. C.	14.25	16.75	7.0	10.6
Columbia	15.10	17.60	7.0	11.5
Spartanburg	15.80	18.30	7.0	12.2

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gallons or more, consumer tank-wagon price. Single deliveries of less than 50 gallons, 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less .5 cent per gallon. The above policy also applies in South Carolina effective January 23, 1939.

Discounts for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Cons'r. tank-wag.	Net dlr.	Inc. tax	tank-wag.
Atlanta, Ga.	21.0	18.0	7.0	10.0
Augusta	20.5	17.5	7.0	8.5
Macon	21.0	18.0	7.0	10.5
Savannah	19.5	16.5	7.0	9.0
Birmingham, Ala.	21.5	18.5	8.0	9.0
Mobile	21.5	18.5	9.0	9.0
Montgomery	22.5	19.5	9.0	11.0
Jackson, Miss.	19.5	16.5	7.0	10.0
Vicksburg	19.5	16.5	7.0	9.5
Jacksonville, Fla.	19.5	16.5	8.0	8.5
Miami	20.0	17.0	8.0	8.5
Pensacola	21.5	18.5	9.0	8.5
Tampa	20.0	17.0	8.0	7.0
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	17.5	14.5	6.0	9.5
Louisville	18.5	15.5	6.0	9.0
Paducah	18.5	15.5	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Cons. tank-car	Dlr. tank-wag.	Inc. tax	tank-wag.
Philadelphia, Pa.	12.0	13.5	5.0	10.0
Pittsburgh	13.0	14.5	5.0	10.5
Allentown	12.5	14.0	5.0	10.5
Erie	13.0	14.5	5.0	10.0
Scranton*	13.0	14.5	5.0	10.5
Altoona	13.0	15.0	5.0	10.5
Dover, Del.		14.0	5.0	10.5
Wilmington		13.5	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon.

***Voluntary discount of 1 cent allowed to dealers only.**

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Cons. tank-car	Dir. tank-wag.	Inc. tax	tank-wag.
Albany	11.9	14.2	5.0	7.50
*Met. N. Y.:				
Manhat., Bronx	11.9	13.4	5.0	7.25
Queens, Br'klyn	11.9	13.4	5.0	7.25
Staten Island	11.9	13.4	5.0	7.25
Buffalo	12.5	13.5	5.0	7.75
Rochester	12.8	14.0	5.0	8.00
Syracuse	12.4	14.4	5.0	7.75
Boston	10.8	12.5	4.0	7.25
Portland, Me.	11.8	13.8	5.0	7.25
Manchester, N.H.	12.5	14.5	5.0	7.75
Burlington, Vt.	12.4	14.0	5.0	7.75
Springfield, Mass	11.5	13.0	4.0	6.50
Worcester	11.4	13.0	4.0	7.75
Hartford, Conn.	11.2	13.3	4.0	7.00
New Haven	11.1	12.8	4.0	6.50
Providence, R. I.	10.8	12.8	4.0	7.00

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective February 15, 1939, the company changed its commercial consumer policy in New York and New England points for tank-wagon delivery to the following: Annual purchases 10,000 gallons and under, tankcar price plus 2 cents per gallon; annual purchases 10,000 gallons up to 50,000 gallons, tankcar price plus 1.5 cents per gallon; annual purchases 50,000 to 200,000 gallons, tankcar price plus 1 cent per gallon; annual purchases 200,000 gallons and over, tankcar price plus one-half cent per gallon. Private consumers pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gallons receive a discount of one-half cent per gallon.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank-truck	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	20.0	21.0	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	†13.75
Spokane	21.5	22.5	6.0	†16.75
Tacoma	20.0	21.0	6.0	†13.75

*Includes 5-cent state tax. †Includes .25-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

March 18, 1939, split dealer discount was canceled.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank-wag.	Dlr.	Incl. tax	tank-wag.
Denver, Colo.	15.5	...	5.0	11.5
Grand Junction	18.5	...	5.0	15.0
Pueblo	16.0	...	5.0	9.0
Casper, Wyo.	17.5	...	5.0	11.5
Cheyenne	15.5	...	5.0	13.0
Billings, Mont.	18.5	...	6.0	13.0
Butte	20.0	...	6.0	15.5
Great Falls	19.5	...	6.0	15.5
Helena	20.5	...	6.0	15.5
Salt Lake, Utah	17.5	17.5	5.0	16.0
Boise, Idaho	20.6	20.6	6.0	18.0
Twin Falls	21.1	21.1	6.0	18.0
Albu'que, N. M.	17.0	17.0	6.5	10.0
Roswell	15.5	15.5	6.5	8.0
Santa Fe	17.5	17.5	6.5	10.0

*Includes city tax of .5 cent. †Includes state tax of 1 mill.

Tank-wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Cons. tank-car	Dir. tank-wag.	Inc. tax	tank-wag.
New Orleans, La.	15.25	17.75	8.0	†11.0
Baton Rouge	15.25	17.75	8.0	‡10.5
Alexandria	15.25	17.75	8.0	‡12.5
Lafayette	15.00	18.00	8.0	‡11.0
Lake Charles	15.25	17.75	8.0	‡12.5
Shreveport	14.00	16.50	8.0	‡11.0
Knoxville, Tenn.	18.50	21.00	8.0	14.5
Memphis	16.50	19.00	8.0	11.0
Chattanooga	18.00	20.00	8.0	12.0
Nashville	17.50	20.00	8.0	11.0
Bristol	18.75	19.50	8.0	13.0

Essolene at dealer price less .5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon; 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Nebraska

STANDARD OIL CO. (NEBRASKA)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank wag.
Omaha	17.5	16.0	6.0	10.3
McCook	16.5	15.9	6.0	9.0
Norfolk	17.0	15.9	6.0	9.0
North Platte	18.3	16.8	6.0	11.1
Scottsbluff	18.0	15.0	6.0	11.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Tnk.-wg. dlr.	Includes tax	tank wag.
Texarkana, Ark..	14.0	5.0	8.0
Fort Smith	15.5	5.0	7.5
Little Rock	17.25	7.5	8.0
Muskogee, Okla.	13.0	5.0	7.0
Oklahoma City	13.0	5.0	6.5
Tulsa	13.0	5.0	7.0

The tank-wagon price is the price to all classes of trade.

Texas

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank wag.
Dallas, Tex.	14.0	18.0	5.0	7.0
Fort Worth	15.0	19.0	5.0	8.0
Houston	14.0	18.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline

IMPERIAL OIL, LTD.

	Tank wag.	Inc. tax	Kero. tank wag.
Halifax, N. S.	24.0	10.0	18.0
St. John, N. B.	24.0	10.0	18.0
Montreal, Que.	22.5	8.0	15.0
Toronto, Ont.	23.5	8.0	16.0
Hamilton, Ont.	23.5	8.0	16.0
Winnipeg, Man.	26.5	7.0	20.5
Brandon, Man.	28.0	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	19.4	7.0	21.4
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. of Louisiana September 26 advanced dealer tank-wagon gasoline .5 cent in Bristol.

Standard Oil Co. of New Jersey September 22 reduced tank-wagon kerosene 2 cents in Norfolk.

Imperial Oil, Ltd., September 28 advanced tank-wagon gasoline and kerosene .5 cent throughout the provinces of Quebec, Ontario, and the Maritimes.

Standard Oil Co. (Indiana) reduced dealer gasoline in Grand Rapids .5 cent September 23 and tank-wagon gasoline .5 cent September 27.

Socony-Vacuum Oil Co., Inc., September 22 reduced dealer tank-wagon gasoline .3 cent in New Haven.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of October 3, 1939

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:	
62 octane and below	.04½
63-66 octane	.04¾ .04⅞
67-69 octane	.04⅞ .05⅛
70-72 octane (regular)	.05¼ .05⅜
60-62 400 grades:	
62 octane and below	.04½ .04⅝
63-66 octane	.04¾ .04⅞
67-69 octane	.04⅞ .05⅛
70-72 octane (regular)	.05¼ .05⅜
64-66 375	.04⅝ .04¾
68-70 360	.05 .05¼

NORTH TEXAS—

U. S. Motor grades:	
62 octane and below	.04½
63-66 octane	.04¾ .04⅞
67-69 octane	.04⅞ .05⅛
70-72 octane (regular)	.05¼ .05⅜
60-62 400	.04½ .04⅝
64-66 375	.04⅝ .04¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:	
62 octane and below	.04⅝ .04¾
63-66 octane	.05 .05¼
67-69 octane	.05⅜
70-72 octane (regular)	.05¼ .05½

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:	
62 octane and below	.04⅞
67-69 octane	no quotations
70-72 octane (regular)	.05¼

CHICAGO (Based on Group 3)—

U. S. Motor grades:	
62 octane and below	.04½ .04⅝
63-66 octane	.04¾ .04⅞
67-69 octane	.05 .05¼
70-72 octane (regular)	.05¼ .05⅜
60-62 400 grades:	
62 octane and below	.04½ .04⅝
63-66 octane	.04¾ .04⅞
67-69 octane	.05 .05¼
70-72 octane (regular)	.05¼ .05⅜
68-70 360	.05 .05¼

PENNSYLVANIA (Inland refineries)—

58-60 U. S. Motor:	
Below 60 octane	.04¾ .05
65 octane	.06¼ .06½
68-70 octane	.06¾ .06½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06¼ .08
58-60 400, 65 oct. and higher	.07¼ .09

EAST COAST (domestic)—

U. S. Motor, 65 and above:	
*New York (Bayonne)	.06½ .06¾
Philadelphia	.06¼ .06¾
Baltimore	.06¼ .06¾
Charleston, S. C.	.06¾ .07

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:	
Below 60 octane	.06
65-67 octane	.06¼
68-70 octane	.06⅜ .06½

Naphtha

PENNSYLVANIA (Inland refineries)—

52-56 450 (blending)	.04¼ .04½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.04¼
Grade 18-55	.05⅛

NORTH TEXAS—

Grade 26-70	.04¼
Grade 18-55	.05⅛

CALIFORNIA—

75-85 375-390	.05½ .06¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70	.04⅝

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03½ .03⅝
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03⅝ .03¾
46-48 gr., 210-230 i.b.p., 480-max., e.p.	.03⅞ .04⅛

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅝ .03¾
42-44	.03¾ .03⅞

NORTH TEXAS—

41-43	.03⅝ .03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03½ .03⅝

ARKANSAS (Ark. and N. La. del.)—

41-43	.03⅝

PENNSYLVANIA (Inland refineries)—

45	.04¾ .05
46	.05 .05⅛
47	.05 .05¼

CHICAGO (Based on Group 3)—

41-43	.03⅝ .03¾
42-44	.03¾ .03⅞

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04¾ .05¾

NEW YORK (Bayonne, N. J.)—

41-43	.04¾ .04⅞

***GULF COAST (domestic)—**

41-43	.04½ .04¾

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03½
No. 1 prime white, 38-42	.03¼ .03⅜
No. 1 straw, 38-40	.03⅛ .03⅜
No. 2 straw, 32-36	.03 .03¼
No. 2 dark, 32-36	.02¾ .02⅞
No. 3 zero to 15, 28-32	.02¾ .03
No. 3, 15 and above, 28-32	.02½ .02⅝

NORTH TEXAS—

No. 1 prime white, 38-42	.03¼ .03⅜
No. 1 straw, 38-40	.03⅛ .03¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03 .03⅛

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	no quotations

CHICAGO (Based on Group 3)—

Range oil	.03⅝ .03⅝
No. 1 prime white, 38-40	.03⅝ .03½
No. 1 straw, 38-40	.03¼ .03⅜
No. 2 straw, 32-36	.03⅛ .03¼
No. 2 dark, 32-36	.03 .03⅛
No. 3, zero to 15, 28-32	.02⅞ .03
No. 3, 15 and above, 28-32	.02⅝ .02⅞

NEW YORK (Bayonne, N. J.)—

*No. 1	.04¾ .05
*No. 2	.04⅜
*No. 4	.03¾

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02¾ .02⅞
No. 4, low pour point, 24-28	.95 1.00
No. 4, 15 and above, 24-28	.85 .90
No. 5, low pour point, 18-22	.70 .75
Below 14 fuel oil, industrial	.45 .50

NORTH TEXAS—

U.G.I. gas oil, under 35	.02¾ .02⅞
No. 4, low pour point, 24-28	.95 1.00
No. 5, low pour point, 18-22	.70 .75
Below 14 fuel oil, industrial	.45 .50

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70 .75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝ .02⅞
No. 4, low pour point, 24-28	1.00 1.10
No. 4, 15 and above, 24-28	.85 .95
No. 5, low pour point, 18-22	.70 .80
No. 5, 15 and above, 18-22	.60 .70
No. 6, low pour point, 10-16	.60 .70
No. 6, 15 and above, 10-16	.35 .45

PENNSYLVANIA (Inland refineries)—

36-40	.04⅛ .04½

CALIFORNIA—

Los Angeles:	
30-40 gas oil, per bbl.	1.15 1.30
24 plus diesel, per bbl.	1.00 1.30
24 plus diesel (bunkers)	1.30 1.40
12-16 (bunkers at tidewater)	.70 .90
10-16 (cargo lots)	.65 .75
12-17 (tank cars)	.60 .85
10-17 (high sulfur)	.50 .70
San Joaquin Valley:	
10-18 (tank cars)	.55 .75
24 plus diesel, per bbl.	1.00 1.25
San Francisco:	
24 plus diesel, per bbl.	1.45 1.50
24 plus diesel (bunkers)	1.55 1.60
10-16 (bunkers)	.90 .95

GULF COAST—

No. 2 fuel	.04¼
43-47 diesel	.03½
48-52 diesel	.03¼ .03⅝
53-57 diesel	.03⅜ .03½
Bunker C (bulk cargoes)	.95 1.00
Bunker C (bunkers)	.90 1.00

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.04¼
28-30 diesel (lighterage 6¼c per bbl.)	1.75
28-30 diesel (tank cars)	.04¼
Bunker C (to ocean-going ships in N. Y. Harbor)	1.15
Industrial fuel (tank cars)	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25	.24
150-160 D, 0-10	.21
150-160 D, 15-25	.20
150-160 E, 15-25	.20
100-110 D, 0-10	.20
Steam-refined:	
631 green (treated)	.16
600 dark green (untreated)	.07

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):	
10 pour point	.28½ .31
15 pour point	.27½ .30
25 pour point	.25½ .28½
Steam refined:	
600	.12 .13
650	.14 .15
600 flash	.14½ .15½
630 flash	.17½ .18½

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3	.11
180-3	.12
180-4	.11½
200-3	.12½
200-4	.12
250-3	.13½
250-4	.13
280-3	.14½
280-4	.14
300-6½	.15
400-3½	.16
100-2¼ paraffin oil	.07
15-20 pour point:	
200-3	.12
200-4	.11½
250-3	.13
250-4	.12½
280-3	.14
280-4	.13½

GULF COAST—

Pale oils:	
200-3	.06½ .07
300-3	.07 .07¼
500-3½	.08 .08¼
750-3½	.08 .08¼
1,200-3½	.09 .09½
1,500-4	.09½ .09¾
Red oils:	
200-5-6	.06¼ .06⅜
300-5-6	.06¾ .07
500-5-6	.07¾ .08
750	.07¾ .08
1,200-5-6	.08¾ .09¼

CALIFORNIA (moving to dom. market)—

Pale oils:	
100-2½-3	.07¼ .08
200-2½-3	.07¼ .08
300-2½-3	.07¼ .08
400-3-4	.07¼ .08
450-3-4	.07¼ .08
550-3-4	.09 .11
600-3-4	.09 .11
Red oils:	
200-4-5	.07¼ .08
300-5-6	.07¾ .08
350-5-6	.09¼ .11½
400-5-6	.09¼ .11½
450-5-6	.09¼ .11½
500-5-6	.09¼ .11½
600-5-6½	.09¼ .11½
700-6½ plus	.09¼ .11¼
750-6½ plus	.09¼ .11¼
900-6½ plus	.09¼ .11¼

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:	
Zero pour point	.27½ .28
10 pour point	.26½ .27
15 pour point	.25½ .26
25 pour point	.23½ .24
200 vis. at 70° F., 3 color:	
Zero pour point	.30¼ .31
10 pour point	.29½ .30
15 pour point	.28½ .29
25 pour point	.26 .28

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.0425

PENNSYLVANIA (Inland refineries)—

122-124 (A.m.p.) w.c. scale	.0390 .0400
124-126 (A.m.p.) w.c. scale	.0390 .0400

NEW YORK—

Wax in bags fully refined:	
123-125 (A.m.p.) wax	.0435
125-127 (A.m.p.) wax	.0455
128-130 (A.m.p.) wax	.0460
130-132 (A.m.p.) wax	.0485
133-135 (A.m.p.) wax	.0515
135-137 (A.m.p.) wax	.0540
124-126 (A.m.p.) w.s.	.0400
124-126 (A.m.p.) y.s.	.0400
Petrolatum in barrels, carload lots:	
Dark green	.02 .02⅛
Amber	.02⅜ .02½
Extra amber	.02⅝ .02¾
Lily white	.05½ .05¼
Snow white	.06⅛ .06¾
Cream	.04⅛ .04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05 .05¼
60-62 400	.05½ .06
65 octane	.06¼ .06½
68 octane	.06¾ .07
70 octane	.07 .07¼

LOS ANGELES—

U. S. Motor grades:	
55-65 octane	.04¾ .05
65-69 octane	.05¼ .05½
Above 69 octane	.05½ .06

KEROSENE

GULF COAST—

41-43 prime white	.05¼
41-43 water white	.05¼

LOS ANGELES—

41-43 water white	.05 .05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s.) in bbls.—

Cylinder stocks:	
600 S.R. unfiltered	.25 .26½
650 S.R. unfiltered	.25 .26
600 flash, S.R.	.24 .27½
630 flash, S.R.	.29 .30
Bright stock:	
8 color	.35 .42

NEUTRAL OIL

200-3 color	.35 .36
150-3 color	.33 .34

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 A.m.p.	.0425
125-127 A.m.p.	.0450
128-130 A.m.p.	.0460
133-135 A.m.p.	.0515
135-137 A.m.p.	.0540
Crude scale:	
124-126 w.s.	.0400
124-126 y.s.	.0375 .0400

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)* $1.10
Shell, De Soto, and Cities Service companies are on a gravity basis in East Texas, with a top price of $1.10 for 39° and above.
Sinclair Prairie Oil Marketing Co. on October 2, 1939, in East Texas, changed from a gravity schedule to a flat price of $1.10 per barrel.
Van, Tex. (Oct. 11, 1938)* $0.93
Talco, Tex. (Oct. 2, 1939)* ..... .65
Rodessa, Tex. ..... See North Louisiana gravity schedule
Cass and Panola counties, Texas ..... See gravity schedule
Altus and Tipton† ..... See note below
Cayuga, Tex. (Feb. 15, 1939) $0.68
Clay Creek, Tex. ..... .85

*Humble Oil & Refining Co. †Gulf Refining Co. Pure Oil Co.'s Van price, 93 cents, effective Oct. 13, 1938.
Altus and Tipton, Oklahoma, starting at below 25° at 71 cents, 2-cent spread to 40° and above at $1.03. Cayuga posted by Pan American Pipe Line Co. Clay Creek by Sun Oil Co.

Southwest Texas

Salt Creek, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)* $0.96
Pettus (Oct. 11, 1938)* 1.29
Flour Bluff (Dec. 3, 1938)* 1.23
Jim Wells County (Oct. 2, 1939)* 1.23
Darst Creek (Oct. 12, 1938)† ..... .96
Darst Creek and Bruner (Oct. 13, 1938)‡ ..... .96
Luling (Oct. 12, 1938)† ..... .87
Lytton Springs (Oct. 12, 1938)† ..... .99
Mirando (Oct. 12, 1938)† ..... .87
Government Wells (Oct. 13, 1938) ..... See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.
Government Wells posted by Sun Oil Co. starts at 20° at 77 cents, 3-cent spread to 24°-24.9° at 89 cents.

Gulf Coast

Sea Breeze, Willow Slough, and LaBelle, Tex. (Sept. 14, 1939)*** $1.10
Conroe, Tex. (Oct. 11, 1938)* 1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)† ..... See note below
Gibson, La. (Oct. 11, 1938)† $1.04
Garden Island, La. (Oct. 12, 1938)‡ 1.24
Lafitte, La. (Oct. 12, 1938)‡ 1.04
Cleveland, Tex. (Oct. 12, 1938)† 1.14
Schwab, Polk County (Feb. 20, 1939) 1.00
Hardin, Tex. (Sept. 14, 1939)* 1.10
Tepetate, La. (Oct. 11, 1938)§ 1.03
Villa Platte, La. (Oct. 11, 1938)§ 1.03
Abbeville, La. (Jan. 1, 1939)§ ..... See note below
Bosco, La. (Dec. 3, 1938)‖ $0.93
Creole, La. (Oct. 13, 1938)‖ ..... .96
Gueydan, Sweet Lake, and Louise, La. (Oct. 13, 1938)‖ ..... See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 13, 1938)** ..... See note below
Long Lake, Tex. (Oct. 13, 1938)** $1.08
Segno and Wing (Oct. 13, 1938)** ..... See note below
Livington (Oct. 11, 1938)† $1.10
Gibson, La. (Oct. 11, 1938)† 1.04
Evangeline, La. (July 7, 1939) ..... .98

*Humble Oil & Refining Co. †Shell Oil Co., Inc. ‡Texas Co. §Continental Oil Co. ‖Pure Oil Co. ¶Magnolia Petroleum Co. **Gulf Refining Co. ***Sun Oil Co. Hardin prices by Humble and Sun companies.
Black Bayou, etc., starts at below 20° at 79 cents; 20°-20.9°, 81 cents; 21°-21.9°, 83 cents; then a 3-cent spread to 26°-26.9°, 98 cents; then a 2-cent spread to 40° and over at $1.14. Abbeville starts at below 36°, 92 cents, 2-cent spread to 40° and over at $1.02. Gueydan, etc., starts below 20°, 79 cents, 3-cent spread to 26°-26.9° at $1, and 2-cent spread to 40° and over at $1.28. Segno and Wink take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 18°, 75 cents, 2-cent spread to 20°-20.9° at 82 cents; then a 3-cent spread to 26°-26.9° at $1; then a 2-cent spread to 34° and over at $1.16. Schwab posted by Shell Oil Co., Inc. Evangeline, La., posted by Standard Oil Co. of Louisiana.

Middle Western States

OHIO OIL CO.
(Effective June 8, 1939)

Illinois old fields $0.95
Illinois basin 1.05
Princeton, Ind. ..... .95
Western Kentucky (June 9, 1939)† ..... .90
Birk City, Ky. (June 9, 1939)¶ 90
Corydon, Ky. (June 9, 1939)¶ ..... .90
Greendale, Porter, Crystal and Wise, Mich. (Apr. 20, 1938)*† ..... $.975
Buckeye, Bentley, Edenville, Beaverton, Mich. (Apr. 20, 1939)* ..... .95
Freeman-Redding, Mich. (Sept. 22, 1939) ..... .95
West Branch and Arenac, Mich (Apr. 20, 1939)* $0.74
Allegan-Kent (Sept. 22, 1939) ..... .95
Bloomingdale (Sept. 22, 1939) ..... .90
Muskegon 1.00
Sherman, Mich. (Apr. 20, 1939)‡ ..... .89
Eastern Kentucky:
Big Sandy River (June 9, 1939)† $1.02
Kentucky River (June 9, 1939)† 1.10

*Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co. pays above posted prices in Porter, Greendale and Sherman, effective Apr. 20. §Imperial Refining Co. ¶Sohio Oil Co. Bloomingdale posted by Tri-Lakes Corp. Kent County by Naph-Sol Refining Co. Effective Sept. 13, 1939, Sohio Corp. posted 95 cents per barrel in Salem, Ill. pool, and on Sept. 15, 1939, posted 90 cents per barrel in the Griffin field in Gibson County, Indiana, and Wabash County, Illinois. Michigan price changes on Sept. 22, 1939, posted by Commonwealth, Inc.

Crude Prices by Gravities

	Oklahoma	Oklahoma and Kansas	North and Central Texas	Louisiana and Arkansas	East Central Texas	Gray County, Texas	Hutchinson and Carson counties, Texas	Raccoon Bend, Satsuma and Tomball, Texas	West Texas and Lea County, N. M.	Fort Collins and Wellington, Colo.	Anahuac and Dickinson, Mirando, Duval, Texas	Refugio, Texas	Gulf Coast Texas	Cass and Panola counties, Texas	Beaumont and West Beaumont, Texas	Lockport, Iowa, Cameron Meadows, Louisiana	Artesia, Jackson and Maljamar, N. M.	Iowa, Louisiana
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Below 18	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$.74	....	$.75
18-18.9	....	....	....	....	....	....	....	....	$.53	....	$.74	$.79	$.79	....	....	.76	....	.77
19-19.9	....	....	....	....	....	....	....	....	.53	....	.74	.79	.79	....	$.79	.78	....	.79
20-20.9	$.60	$.70	....	....	....	....	....	....	.55	....	.77	.82	.82	....	.82	.80	....	.81
21-21.9	.63	.72	....	....	....	....	....	....	.57	....	.80	.85	.85	....	.85	.82	....	.85
22-22.9	.66	.74	....	....	....	....	....	....	.59	....	.83	.88	.88	....	.88	.85	....	.86
23-23.9	.69	.76	....	....	$.78	....	....	.97	.61	....	.86	.91	.91	....	.91	.88	....	.89
24-24.9	.72	.78	$.71	....	.80	....	....	.99	.63	....	.89	.94	.94	....	.94	.91	....	.92
Below 25	....	....	....	$.73	....	....	....	....	....	....	....	....	....	$.73	....	....	....	....
25-25.9	.75	.80	.73	.75	.82	....	....	1.01	.65	....	.92	.97	.97	.75	.97	.94	....	.95
26-26.9	.78	.82	.75	.77	.84	....	....	1.03	.67	....	.95	1.00	1.00	.77	1.00	.97	....	.98
27-27.9	.81	.84	.77	.79	.86	....	....	1.05	.69	....	.97	1.02	1.02	.79	1.02	.99	....	1.00
28-28.9	.84	.86	.79	.81	.88	$.72	$.67	1.07	.71	$.81	.99	1.04	1.04	.81	1.04	1.01	0.61	1.02
29-29.9	.87	.88	.81	.83	.90	.74	.69	1.09	.73	.83	1.01	1.06	1.06	.83	1.06	1.03	.63	1.04
Below 30	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
30-30.9	.90	.90	.83	.85	.92	.76	.71	1.11	.75	.85	1.03	1.08	1.08	.85	1.08	1.05	.65	1.06
31-31.9	.92	.92	.85	.87	.94	.78	.73	1.13	.77	.87	1.05	.110	.110	.87	1.10	1.07	.67	1.08
32-32.9	.94	.94	.87	.89	.96	.80	.75	1.15	.79	.89	1.07	.112	.112	.89	1.12	1.09	.69	1.10
33-33.9	.96	.96	.89	.91	.98	.82	.77	1.17	.81	.91	1.09	1.14	1.14	.91	1.14	1.11	.71	1.12
34-34.9	.98	.98	.91	.93	1.00	.84	.79	1.19	.83	.93	1.11	1.16	1.16	.93	1.16	1.13	.73	1.14
Below 35	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.00	1.00	.93	.95	1.02	.86	.81	1.21	.85	.95	1.13	1.18	1.18	.95	1.18	....	.75	....
36-36.9	1.02	1.02	.95	.97	1.04	.88	.83	1.23	.87	.97	1.15	1.20	1.20	.97	1.20	....	.77	....
37-37.9	1.04	1.04	.97	.99	1.06	.90	.85	1.25	.89	.99	1.17	1.22	1.22	.99	1.22	....	.79	....
38-38.9	1.06	1.06	.99	1.01	1.08	.92	.87	1.27	.91	1.01	1.19	1.24	1.24	1.01	1.24	....	.81	....
39-39.9	1.08	1.08	1.01	1.03	1.10	.94	.89	1.29	.93	1.03	1.21	1.26	1.26	1.03	1.26	....	.83	....
40 and over	1.10	1.10	1.03	1.05	1.12	.96	.91	1.31	.95	1.05	1.23	1.28	1.28	1.05	1.28	....	.85	....

NOTE—Effective October 2, 1939, Humble Oil & Refining Co. made a revision in its prices for crude oil in the Gulf Coast district, Mirando, Anahuac and Dickinson fields which are not included in the above table for the reason that the action of all competing buyers in the same fields had not yet been announced. The Humble's new Gulf Coast prices start at below 20 gravity, 86 cents, with 2 cents added for each degree up to and including 40 degrees and over at $1.28. Humble's new Refugio schedule starts at below 20 gravity, 91 cents, with 2 cents added for each degree up to and including 40 degrees and over at $1.33. Humble's new Anahuac and Dickinson schedule starts at below 20 gravity at 81 cents, with 2 cents added for each degree up to and including 40 degrees and over at $1.23. Humble's Mirando district schedule starts at below 20 gravity, 86 cents, with 2 cents added for each degree up to and including 40 degrees and over at $1.28. Jim Wells County was taken out of the Mirando district and given a flat price of $1.23. Effective October 3, Sinclair Prairie Oil Marketing Co. met the new Humble prices and gravities in the Gulf Coast pools in which it buys. Magnolia Petroleum Co., effective October 2, adopted Humble's prices in the Mirando district, applying them also to Beaumont, Tex., district.

Column 1—Magnolia Petroleum Co., effective October 14, 1938. Shell Petroleum Corp., effective October 22, 1938. Shell Oil Co., Inc., April 1, 1939.

Column 2—Standard Oil Co. of Indiana, effective October 11, 1938, below 29 degrees 86 cents, with 2-cent spread to 40 and over at $1.10. Same company on October 17 revised the schedule to start at below 21 degrees at 70 cents, with 2-cent spread to 40 and over at $1.10. Sinclair Prairie Oil Marketing Co. schedule started at below 25 degrees, 60 cents; 25-25.9, 80 cents with 2-cent differential up to $1.10 for 40 degrees and over, effective October 11, but was revised on October 14, starting at 21 gravity, 60 cents, with a 3-cent spread to 30-30.9 degrees at 90 cents, then a 2-cent spread to 40 degrees and over at $1.10. Effective February 16, 1939, Sinclair Prairie posted 25-25.9 degrees at 58 cents, with 5 cents added for each degree up to and including 29-29.9 degrees at 78 cents; then 4 cents added for each degree up to and including 32-32.9 at 90 cents; 33-33.9 was posted at 96 cents, with 2 cents added for each degree up to 40 and over at $1.10. Gulf Oil Corp. schedule starts at below 25 degrees, 78 cents, with 2-cent differential up to $1.10 for 40 degrees and over, effective October 13. Shell Oil Co. schedule same as that of Gulf, effective October 13 to October 21 (see Column 1). The Texas Co. schedule starts at 28-28.9 degrees, 86 cents, with top of $1.10 for 40 degrees and over. Pure Oil Co. same as Standard of Indiana's October 11 schedule, effective October 14.
Gulf Oil Corp. schedule starts at below 25 degrees, 78 cents, with 2-cent differential up to $1.10 for 40 degrees and over, effective October 13. Shell Petroleum Corp. schedule same as that of Gulf, effective October 13 to October 21 (see Column 1). The Texas Co. schedule starts at 28-28.9 degrees, 86 cents, with top of $1.10 for 40 degrees and over. Pure Oil Co. same as Standard of Indiana's October 11 schedule, effective October 14.

Column 3—Humble Oil & Refining Co. in Central Texas, effective December 3, 1938. Magnolia Petroleum Co. schedule in North and Central Texas, same as the Humble, excepting that it starts at below 29 degrees at 79 cents, effective December 3, 1938. The Texas Co. schedule in North and Central Texas, same as Magnolia's, but effective October 12. Gulf Refining Co. same as the Texas Co., effective October 13, Sinclair Prairie Oil Marketing Co., in Mexia and North Central Texas, below 29 degrees, 76 cents, with 2 cents added for each degree up to and including 40 and over at $1, effective October 11. Stanolind Oil Purchasing Co. schedule started at below 29 degrees at 79 cents with a top of $1.03 for 40 degrees and over, effective October 11, but was revised on October 17 to read below 21 degrees, 60 cents with a 2-cent spread to 40 degrees and over at $1.

Column 4—Standard Oil Co. of Louisiana, effective October 5, 1938. Met by Gulf Refining Co. October 13; met by Texas Co. October 12.

Column 5—Humble Oil & Refining Co., October 11, 1938.

Column 6—Humble Oil & Refining Co., effective December 3, 1938. Sinclair Prairie Oil Marketing Co., October 11, 1938. Texas Co. quotes "Panhandle sweet crude," beginning with 34-34.9 degrees, at 84 cents, with 2-cent spread to 40 and over at 96 cents, and "Panhandle sour crude," 79 cents for 34-34.9 degrees, with a top of 91 cents for 40 degrees and over, effective October 12. Magnolia Petroleum Co. met Humble prices throughout, effective December 3. Gulf Refining Co. quotes "Panhandle sweet crude" at below 29 degrees, 72 cents with a 2-cent spread, and a top price of 96 cents for 40 degrees and above, and "Panhandle sour crude" below 29 degrees, 67 cents, with a top of 91 cents for 40 degrees and above effective October 13. Phillips Petroleum Co. schedule for sweet crude in the Gray, Carson and Hutchinson counties, starts at below 29 degrees, 72 cents, with a spread of 2 cents up to 96 cents for 40 degrees and over, effective February 7, 1939.

Column 7—Humble Oil & Refining Co., effective December 3, 1938. Sinclair Prairie Oil Marketing Co., October 11, 1938. Texas Co. quotes "Panhandle sweet crude" at 34-34.9 degrees, 84 cents, with a top of 96 cents for 40 gravity, and "Panhandle sour crude" at 34-34.9 degrees, 79 cents, with a top of 91 cents for 40 degrees and over, effective October 12. Gulf Refining Co. quotes "Panhandle sweet crude" at below 29 degrees, 72 cents, with a top of 96 cents for 40 degrees and over and "Panhandle sour crude" at below 29 degrees, 67 cents, with a top of 91 cents for 40 degrees and above, effective October 13. Phillips Petroleum Co. schedule for sour crude in Carson, Moore and Hutchinson counties, starts at below 29 degrees at 67 cents, with a spread of 2 cents up to 91 cents for 40 degrees and over, effective February 7, 1939.

Column 8—Humble Oil & Refining Co., effective October 11, 1938. Magnolia Petroleum Co., in Tomball, effective October 12.

Column 9—Humble Oil & Refining Co., effective October 11, 1938. The Texas Co. schedule starts below 26 degrees, 65 cents, and ends at 36 degrees and over at 87 cents, effective October 12. Gulf Refining Co. starts at below 26 degrees at 65 cents and ends at 40 degrees and over at 95 cents, effective October 13. Magnolia Petroleum Co. schedule starts below 25 degrees, 63 cents, and ends at 40 degrees and above at 95 cents, effective October 12. Sinclair Prairie Oil Marketing Co. schedule same as that of Magnolia, effective October 11 but revised on March 24, 1939, to stop at 36 degrees and over at 87 cents. Stanolind Oil Purchasing Co. schedule same as that of Humble, effective October 11. Stanolind Oil & Gas Co. (Winkler County) starts at below 26 degrees, 65 cents, with a 2-cent spread, and a top of 95 cents for 40 degrees and above, effective October 11, 1938. Effective September 1, 1939, Shell Oil Co., Inc., posted Yoakum County crude, starting at below 20 degrees, 53 cents, with 2 cents added for each degree up to 36 degrees and over at 87 cents.

Column 10—Continental Oil Co., effective October 11, 1938.

Column 11—Gulf Refining Co. in Anahuac, effective October 12, 1938. By Humble Oil & Refining Co. in Anahuac, Dickinson and Mirando, effective December 3, 1938; by the Texas Co. in Mirando and Duval but starting at below 21 degrees, 77 cents, with a 2-cent spread up to and including 28 and above at 99 cents, effective October 12, 1938. Effective September 14, 1939, Sun Oil Co. placed West Orange, New Batson and New Hull on Anahuac price schedule.

Column 12—Humble Oil & Refining Co., effective December 3, 1938. The Texas Co. starting at below 21 degrees at 81 cents and stopping at 28 and above at $1.04, October 13, 1938.

Column 13—Posted by Humble Oil & Refining Co., effective October 11, 1938. Pure Oil Co., October 13, starting at below 20 degrees, 79 cents. The Texas Co. schedule in coastal Texas and Louisiana, starts at below 21 degrees, 82 cents, with 3-cent differential up to 26-26.9 at $1 and then a 2-cent differential to top of $1.16 for 34 degrees and above, effective October 12. Gulf Refining Co. schedule on Louisiana Gulf Coast starts at below 18 gravity, 76 cents, with 2-cent spread to 20-20.9 degrees at 82 cents, then a 3-cent spread to 26-26.9 degrees at $1, then 2-cent spread to a top of $1.16 for 34 degrees and over, effective October 12, 1938. Sun Oil Co. met Humble prices October 13, stopping at 34 degrees and over at $1.16. Effective September 14, 1939, Sun schedule was continued to 40 degrees and over at $1.28.

Column 14—Magnolia Petroleum Co., effective October 12, 1938.

Column 15—Standard Oil & Gas Co. in West Beaumont, effective October 11, 1938, and Magnolia Petroleum Co. in Beaumont field, effective October 12.

Column 16—Magnolia Petroleum Co., effective October 12, 1938.

Column 17—Continental Oil Co., effective October 11, 1938.

Column 18—Shell Petroleum Corp., October 11, 1938. Shell Oil Co., Inc., April 1, 1939.

perial, Tri-Lakes, and Naph-Sol companies.

West Texas

See gravity table:

Fisher County, Texas (Apr. 1, 1939)
See note below

Pecos County (Oct. 11, 1938)* $0.78
Pecos shallow (Oct. 11, 1938)† ..... .65

*Shell Oil Co., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Oil Co.

Fisher County, Texas, by Shell Oil Co., Inc., below 25°, 68 cents; 25°, 70 cents, with 2-cent spread to 40° and over at $1.

North Louisiana and Arkansas

Shreveport, La. (Sept. 7, 1939) ... $1.05
See note below
Smackover, Ark. (Oct. 5, 1938)* ..... .73
Buckner, Magnolia, and Village, Ark. (Oct. 5, 1938)* ..... See note below
Schuler, Jones sand (Sept. 13, 1939) .79
Schuler, Reynolds sand (Sept. 13, 1939) ..... .91
Tullos and Urania $0.89
Cotton Valley, La. (distillate) (Dec. 23, 1938)* 1.20
Lisbon, La. (Apr. 29, 1939) .....
See note below
Atlanta, Ark. (Sept. 13, 1939) ..... .93
Magnolia, Ark. (Sept. 13, 1939) ... .93
University, La. (Sept. 11, 1939) .....
See note below

*Smackover posted by Standard Oil Co. of Louisiana, Oct. 5, 1938; by Magnolia Petroleum Co., Oct. 12; by Gulf Refining Co., Oct. 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

The above Schuler, Atlanta, and Magnolia, Arkansas, flat prices posted by Lion Oil Refining Co. Shreveport flat prices posted by Caddo Crude Oil Purchasing Co. and Atlas Oil Corp.

Buckner, Magnolia, and Village, Arkansas prices effective Sept. 13, 1939, by Standard Oil Co. of Louisiana, start at below 25° at 63 cents, with 2 cents added for each degree up to 40 and over at 95 cents.

Effective Sept. 7, 1939, Standard Oil Co. of Louisiana posted gravity prices in Shreveport field beginning at below 25°, 73 cents; 25-25.9°, 75 cents, with 2 cents added for each degree up to 40 and over at $1.05.

In the Lisbon, Louisiana, field, effective Sept. 14, 1939, Gulf Refining Co. and Caddo Crude Oil Purchasing Co. posted 27-27.9°, 66 cents, with 2 cents added for each degree up to 35 and over at 82 cents.

In the Baton Rouge (University) field, Louisiana, effective Sept. 11, 1939, Standard Oil Co. of Louisiana posted below 20° 79 cents, with 3 cents added for each degree upward to 26-26.9° at $1, and then 2 cents added for each degree up to 40 and over at $1.28.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)* ... $0.92
Elk Basin, Wyo. (Oct. 11, 1938)*† ... .90
Grass Creek, light, Wyo. (Oct. 11, 1938)*† ..... .90
Grass Creek, heavy (Oct. 11, 1938)† .40
Lance Creek, Wyo. (Oct. 11, 1938)* .77
Rock Creek, Wyo. (Oct. 11, 1938)* .. 1.00
Iles, light, Colo. (Oct. 11, 1938)† .... .98
Iles, heavy, Colo. (Oct. 11, 1938)† ... .92
Dutton Creek, Wyo. (Oct. 11, 1938)†
See note below
Frannie, light, Wyo. (Oct. 11, 1938)† $0.55
Frannie, heavy, Wyo. (Oct. 11, 1938)† ..... .42
Hamilton dome, Wyo. (Oct. 11, 1938)† ..... .35
Midway, Wyo. (Oct. 11, 1938)† .....
See note below
Salt Creek Tensleep Crude, Wyo. (Oct. 11, 1938)† $0.646
Salt Creek (Oct. 11, 1938) See note below
Canon City, Colo. (Oct. 11, 1938)‡. .$0.90
Florence, Colo. (Oct. 11, 1938)‡ .... .90
Cat Creek, Mont. (Oct. 11, 1938)‡... 1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡ .... .98
Lance Creek, Wyo. (Oct. 11, 1938)‡ .77
Lea County, New Mexico .....
See West Texas gravity schedule†
Artesia, Jackson and Maljamar .....
See gravity table‡
Fort Collins and Wellington, Colo. .....
See gravity table‡
Eddy County, New Mexico (Oct. 11, 1938)§ $0.77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. §Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crudes start at below 29°, 86 cents, 2 cents spread up to 40° and over at $1.10. Salt Creek crude, excepting Tensleep, takes Standard Oil Co. of Indiana's Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective Oct. 11, discontinued posting prices in Greybull-Torchlight, Wyoming, and Hogback and Hospah, New Mexico.

Eastern States

SOUTH PENN OIL CO.
(Effective Mar. 6, 1939)
Pennsylvania Grade oil in National Transit lines (Bradford field) .. $2.00
Pennsylvania Grade Oil in Southwest Pennsylvania lines 1.65
Pennsylvania Grade oil in Eureka Pipe Line lines 1.59
Pennsylvania Grade oil in Buckeye Pipe Line lines 1.55
Corning grade oil in Buckeye Pipe Line Co. line (Jan. 24) 1.02

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective Mar. 6, 1939)
Bradford, Pa. $2.00
Allegany, N. Y. 2.00

PENNZOIL CO.
(Effective Mar. 6, 1939)
Group A $1.95
Group B 1.94
Group C 1.93
Group D 1.92
Group E 1.90

PURE OIL CO.
(Effective Mar. 6, 1939)
West Virginia $1.59

Canada

ONTARIO
(Oct. 25, 1938, by Imperial Oil, Ltd.)
Petrolia $1.90
Oil Springs $1.97

TURNER VALLEY
(Jan. 5, 1938, by Imperial Oil, Ltd.)
Clear naphtha and discolored naphtha, 65° and higher $2.14
Discolored naphtha and crude oil, 40°-40.9° 1.14
Increasing 2 cents for each degree gravity with top price for 64°-64.9° 1.6:
These prices f.o.b. producers' field tankage.

Crude-Oil Price Changes

Effective October 2, Sinclair Prairie Oil Marketing Co. posted a flat price of $1.10 per barrel in East Texas. The company had been buying on a gravity schedule with a top of $1.10 for 39-gravity and over.

Effective October 2, 1939, Humble Oil & Refining Co. revised its prices on lower gravities in the Texas Gulf Coast, Refugio, Anahuac, Dickinson, and Mirando fields, and the new prices are, on an average, a slight increase over the old. It also posted Talco, Tex., at 65 cents, a 10-cent increase; Gulf Coast prices start at below 20 gravity 86 cents, with 2 cents added for each degree up to 40 and over at $1.28. Mirando is given the same price schedule as the Gulf Coast pools; Anahuac and Dickinson schedule starts at below 20°, 81 cents, with 2 cents added for each degree up to 40 and over at $1.23. Refugio's schedule starts at below 20°, 91 cents, with 2 cents added for each degree up to 40 and over at $1.33. West Columbia field is dropped from the Humble's Gulf Coast schedule. Jim Wells County pools were posted separately for the first time by Humble, which gives them the same price as is paid for Flour Bluff, $1.23 per barrel. The Humble's Texas Gulf Coast schedule affects Goose Creek, Liberty, Hull, Orange, Pierce Junction, Barbers Hill, Sugarland Thompson, Mykawa, Webster, Clear Lake, Raccoon Bend (shallow sand), and Amelia fields. The Mirando schedule is effective in Duval, Jim Hogg, Webb, and Zapata counties and in the Heyser and Placedo fields.

Effective October 3, Sinclair Prairie Oil Marketing Co. and Stanolind Crude Purchasing Co. met the new Humble prices in the Gulf Coast pools in which they buy.

Magnolia Petroleum Co., effective October 2, 1939, posted Beaumont and Mirando, Texas, crude below 20 gravity, 86 cents, with 2 cents added for each degree upward to 40 and above at $1.28.

Gulf Refining Co., effective October 2, met the Humble's new prices in Gulf Coast pools, and in the Anahuac, Hull, Orange, Pierce Junction and Thompson deep field will pay for below 20 gravity 81 cents with a top of $1.23 for 40 gravity and above.

Steveville Field

In the Steveville field east of Calgary Anglo-Canadian Oil Co.'s No. 3 Rainy Hills, SW¼ Section 34-19-10w4, has been cemented below 3,500 ft., more than 150 ft. in the Madison limestone, and is gun-perforating gas and oil sands in the upper formations before deepening. Standard of British Columbia's No. 1, LSD 13, Section 22-20-12w4, is rigging.

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Ellwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Santa Paula*	Kettleman Hills	Wheeler Ridge	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.90	.88	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	...	...	...	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29	...	...	...	...	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.36	...	1.42	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.40	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents, 24-24.9, 99 cents; 25-25.9, $1.03 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

Montebello—Effective August 11 Standard Oil Co. of California increased prices in the Montebello field ranging from 1 cent per barrel for 26-26.9 gravity to 8 cents for 40 gravity, in addition to which the price schedule has been extended to provide new prices for gravities of 41 degrees and above. The new schedule ranges from 77 cents per barrel for 14-14.9 degrees to $1.75 for 46 gravity and above.

Personal Paragraphs

WINTHROP ROCKEFELLER, the only one of five sons of JOHN D. ROCKEFELLER, JR., to choose an oil career, sailed September 26 from New York on the Italian Line's Conte di Savoia for Genoa and Naples, with Cairo, Egypt, as his ultimate destination. The ship, which brought 2,156 passengers to New York, left with only 238, of whom Mr. Rockefeller was the last to go aboard, just 8 minutes before she sailed. "I'm just one of the assistants in the foreign trade department of the Socony-Vacuum Oil Co. and I'm going on a routine business trip to Cairo," he said, adding that he expected to be gone 2 months.

DONALD W. GLENDINNING, technical assistant in the head office of Shell Oil Co., Inc., in San Francisco, Calif., has gone to New York where his headquarters will be hereafter.

C. W. HAMILTON, assistant to the vice president of Gulf Oil Corp., New York producing division, is in Venezuela. He attended ceremonies September 28 in Guanta marking the opening of another petroleum shipping port in Venezuela through which Oficia production will flow into world markets.

C. E. DAVIS, manager of production for Bahrein Petroleum Co., and GAVIN WITHERSPOON, chief petroleum engineer for California Arabian Standard Oil Co., left San Francisco by Clipper recently for Hong Kong. From there they hoped to arrange transportation back to their company headquarters on Bahrein Island.

JOHN HAY, for 6 years manager of Standard Oil Co. of Indiana in Montana, has been made vice president and general manager of Standard Oil Co. of Nebraska, recently acquired by the first-named company. Mr. Hay, whose headquarters formerly were in Billings, Mont., has gone to Omaha, Neb., to assume his new office. A. E. TESSEIN, who was assistant to Mr. Hay, takes the latter's place. MARK GOOD, formerly agent in Helena, Mont., succeeds Mr. Tessein.

VIRGIL WOOD and DUDLEY WOOD, partners in Broswood Oil Co., have returned to Midland, Tex., and resumed work in the Permian basin after several months' operation in Illinois and Indiana.

DELBERT LEGGETT, district land man for Stanolind Oil & Gas Co. for the past several years, with offices in Midland, Tex., has been promoted to assistant division land man in the company's Fort Worth, Tex., offices. Mr. Leggett and his family planned to move this week. J. G. McMILLIAN, assistant district land man in Midland, will take over Mr. Leggett's former duties, and W. H. GROUND, of the Fort Worth office, will succeed Mr. McMillian.

PAUL SHUMAN, Philadelphia, Pa., treasurer of Atlantic Refining Co., was elected to membership in the board of directors at a recent meeting of the board. Mr. Shuman entered the employ of the Atlantic Refining Co. in 1920 as an accountant in the controller's office. He was elected assistant treasurer of the company in 1929 and was promoted to treasurer in 1937. He is a member of the Union League of Philadelphia and of St. Davids Golf Club, Wayne, Pa. He fills a vacancy in Atlantic's board of directors created by the death last month of J. W. van Dyke.

J. M. RUSSELL, equipment engineer of Sarawak Oilfields, Ltd., Miri, Sarawak, Island of Borneo, is making a 6-month tour of the oil fields in the United States, studying drilling and production methods. He is now in the Mid-Continent area.

H. S. JONES and EARL MATHEWS, independent oil operators of Fort Worth and Houston, Tex., respectively, made the trip to Los Angeles, Calif., by airplane for the T.C.U. vs. U.C.L.A. football game there last Friday night. LLOYD EARLE, Fort Worth, owner of the plane, and CALVIN McLAREN, of Taylor, Tex., also were in the party.

CLIFFORD MOOERS, president of Shasta Oil Co., Houston, Tex., has returned from a vacation which took him to Alaska and the West Coast.

W. C. KRUGER, of Shreveport, La., and Kilgore, Tex., has organized the Yazoo Refinery, Inc., recently granted a charter in Mississippi, whose first oil production was discovered recently in Yazoo County.

RAYMOND B. KELLY, division manager of Pure Oil Co.'s Fort Worth, Tex., offices, will be transferred about October 15 to Olney, Ill., and take charge of Pure's Illinois operations. He will succeed ROBERT W. McILVAIN, JR., who will be moved to Fort Worth to take over Mr. Kelly's present post.

H. W. HARTS, production superintendent of Warren Petroleum Corp., was elected president of the Technical Club, Tulsa, last week. J. N. McCLURE, Elliott Co., was chosen vice president, and C. F. LUCKFIELD, Stanolind Pipe Line Co., secretary. Members of the organization are engineers, largely employed by companies.

JOHN W. MELTON, with Atlantic Refining Co. at Shawnee, was elected president of the Oklahoma Oil Scouts Association, at a meeting in Oklahoma City last Friday night. C. W. MICHAELS, with Shell Oil Co., Inc., at Enid, and RANNY MORRIS, with Stanolind at Shawnee, are vice presidents, with MICKEY BARRETT, with Ohio at Enid, secretary-treasurer. LOU CURRY, with Deep Rock at Shawnee, was named chairman of the executive committee.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Prairie Oil & Gas Co. is preparing to run 100,000 bbl. a day from Oklahoma instead of 58,000 bbl., as at present.

Contracts for 2,000,000 bbl. of Cushing, Okla., crude have been made between White & Sinclair and the McMan Oil Co., producers, and an unnamed eastern refiner at a price of 55 cents per barrel.

Lt. W. Harold Pearson, son of Lord Cowdray, internationally known oil man, was shot and killed by a German sentry as he was trying to escape from an army prison camp.

20 YEARS AGO

Julius Fohs, eminent geologist, believes California has reached its zenith as an oil region, and looks to the Mid-Continent and Gulf Coast fields to maintain future adequate supplies of crude oil. He considers Oklahoma one-third undeveloped; Texas two-thirds, and Louisiana three-fifths undeveloped.

E. W. Marland, of Ponca City, Okla., and associates, pay $620,000 for the NW¼ Section 34-25-9, at an auction sale of Osage leases, at Pawhuska, Okla. It was the highest price yet paid for an Osage lease.

10 YEARS AGO

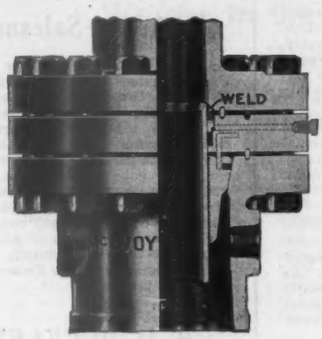
The price of 20 representative petroleum stocks on the New York Stock Exchange and New York Curb average $57 per share on October 5.

A cave-in in the Sour Lake field in Texas has made a crater 800 ft. across and from 75 to 90 ft. deep. One theory advanced is that water finding its way into the salt beneath the cap rock, and being pumped out in solution with the oil production, has caused an immense subterranean cave and a settling of the surface.

New or Improved Equipment

Double Pipe Support Featured in New McEvoy Casing Head

A high-pressure casing head featuring combined slip and construction weld has been announced by McEvoy Co., Houston, Tex. This head includes a new welding



flange which is bolted between flanges of the casing head.

After cementing, the casing is slacked off to the proper tension, and slips are inserted to support the load. Slip handles and pipe are cut off with a cutting torch and the welding flange is slipped over the pipe and temporarily bolted in place. The pipe then is sealed off with asbestos packing and welded to the welding flange.

The weld may be tested by applying pressure to the annular space between weld and packing, through a tapped hole in the welding flange. After testing, the temporary bolts holding the welding flange are removed and the next section of the christmas tree is installed.

Among advantages claimed for the casing head are double pipe support, slips and welding; double seal, welding and stuffing box. It can be used with or without bored-out preventers, and there is no casing hanger spacing problem. This casing head will support 10,000 to 15,000 ft. of casing without bottlenecking the pipe at the slips. It is available to 10,000 lb. test pressure.

Kinzbach Makes Shifts in Staff

Kinzbach Tool Co., Houston, Tex., announces territorial changes in its sales and service staff in line with a recent expansion program. Charles W. Eich-

CHAS. W. EICHBAUM, JR.

JUDSON McCANN

baum, Jr., who represented Technical Oil Tools, Ltd., for 2½ years and Hewitt Kuster and Sperry-Sun Well Surveying Co. 2½ years, is transferred from Houston to the South Texas district. Mr. Eichbaum, a graduate mechanical engineer from the University of California, has been working in the oil country since 1927 and he joined the Kinzbach sales and service staff early this year.

Judson "Doc" McCann, who joined the organization in August 1939, has been named South Louisiana representative. For the past 6½ years Mr. McCann has been with Union Sulphur Co., and he previously represented Layne-Louisiana Co. He is a native of Louisiana.

Ensign Carburetor Makes Shifts

Robert R. Wyker, assistant to the president of Ensign Carburetor Co., Ltd., will assume the position of sales manager in addition to his other duties, making his headquarters at the main office, in Huntington Park, Calif. Mr. Wyker, who has been with Ensign 5 years, was formerly engineer for Union Metal Co., Los Angeles, Calif.

ABBOTT

Ralph G. Abbott, who was on the engineering staff of the Chicago branch, becomes manager of the Dallas, Tex., branch. He is a graduate of the University of Michigan. Before joining Ensign he was sales engineer for Pierce Governor Co., Anderson, Ind.

Roy Mylander, formerly on sales work in the Dallas territory, will be in charge of field service, with headquarters at the factory in Huntington Park.

Simmons Now Advertising Manager

H. H. Simmons, advertising manager of Crane Co., Chicago, has been promoted to manager of advertising and sales promotion, succeeding Russell G. Crevis-

H. H. SIMMONS

ton, who is now director of trade relations. In addition to directing advertising Mr. Simmons will supervise the company's related sales services: sales promotion; catalogs; displays and exhibits; the two Crane magazines, the Home Desirable and Valve World, and publicity.

Mr. Simmons had 15 years' experience in advertising and merchandising a wide variety of industrial and building products before joining Crane Co. 4 years ago. He has just completed a term as president of the Engineering Advertisers Association of Chicago and he is a director of the National Industrial Advertising Association.

Trade Literature

GRISCOM-RUSSELL CO., 285 Madison Avenue, New York.—Bulletin describing design and applications of Twin G-Fin Section heat exchanger for heating or cooling fluids of low heat conductivity or high viscosity.

PRECISION SCIENTIFIC CO., 1750 North Springfield Avenue, Chicago.—Catalog of new apparatus for A.S.T.M. proposed tentative method of test for gum stability of gasoline, A.S.T.M. proposed tentative method of test for carbon residue by the Ramsbottom method, and British Air Ministry oxidation test of mineral tools.

CHICAGO BRIDGE & IRON CO., Old Colony Building, Chicago.—Twenty-fifth anniversary issue of Water Tower.

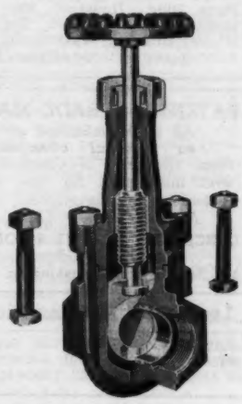
OLIVER UNITED FILTERS, INC., 33 West Forty-second Street, New York.—Bulletin on Oliver precoat filtration.

LINCOLN ELECTRIC CO., Cleveland, Ohio.—Reprint of an advertisement in which J. F. Lincoln, president, pledges company to refrain from war profiteering.

AIR-MAZE CORP., Cleveland, Ohio.—Bulletin on Air-Maze oil-bath filter silencer.

OIC Valve Uses Either U-Bolt or Bolts of Standard Stock

A gate valve known as the "Duo-Bolt," whose conventional U-bolt is replaceable with standard stock bolts, has been introduced by Ohio Injector Co., Wadsworth, Ohio. It is designed for the petroleum, industrial, chemical processing, and other fields, according to P. M. Arnall, vice president of the company.



The new valve features an extra-large drain duct to allow fluids to flow rapidly back into the body when piping operations are discontinued. It also has a self-seating-type horseshoe-shaped slip-on wedge of standard taper. The wedge comes in malleable iron on iron valves with minimum tensile of 40,000 lb. per sq. in. and in high-grade steam bronze, A.S.T.M.-B-61 on the bronze-mounted valve. The fact that the valve can use either a U-bolt or standard stock bolts means longer life, lower replacement and maintenance costs, and lower parts inventory.

Simon Represents Jensen

Larry E. Simon, formerly of the National Refining Co.'s engineering department, has been appointed a district representative of the Jensen Brothers Manufacturing Co., Coffeyville, Kans. He will have charge of Jensen jack sales in the New York, Pennsylvania, Ohio, West Virginia, and eastern Kentucky areas. His headquarters will be in Bradford, Pa.

Frye and Powell Made Managers

Union Wire Rope Corp., of Kansas City, Mo., has appointed H. E. Frye district manager in its Gulf Coast sales territory, with headquarters at 5805 Navigation

H. E. FRYE

EVANS POWELL

Boulevard, Houston, Tex. Mr. Frye has been with the company as a salesman since its organization in 1926 serving first in the Kansas oil fields and later in the Portland, Ore., district.

Evans Powell has been made district manager in the Rocky Mountain territory, with headquarters at Twenty-sixth and Walnut streets, Denver, Colo. Mr. Powell had been in the central office in Kansas City.

CLASSIFIED ADVERTISING

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER
Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas; 2014 Second Nat'l. Bank Bldg., Houston. 506 Aztec Building., San Antonio, Tex. 457 Munsey Building, Washington, D. C. Address any of these offices.

PATENTS — TRADE MARKS
All cases submitted given personal attention.
Form "Evidence of Conception" with instructions for use and "Schedules of Government and Attorneys' Fees"—FREE.
LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
418 Bowen Bldg., Washington, D. C.

Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

BROKERS and SALESMEN
only
A complete SERVICE EXPERTS in every department of the Oil Business at your SERVICE a REAL SET-UP. The best opportunity ever offered you. Leases in large or small lots at
WHOLESALE PRICES
Write today and get started right.
OIL BROKERS EXCHANGE
200 Don Juan Bldg., Santa Fe, N. M.

SACRAFICE 40-acre Oil Lease, Chaves County, for only $10.00, full price. Guarantee title. P. O. Box 191, Clovis, N. Mex.

MISSOURI Leases in blocks and scattered acreage. HARRAH and FRITH. Chillicothe, Missouri.

60% INTEREST 7000 ac. Colorado Free for 2500 ft. well to test Pennsylvanian through Ordovician. Structure, source beds, and Sands approved by first class geologist. W. P. THOMSEN, 412 W. 6th St., Los Angeles, California.

AMAZING RESULTS being accomplished thru re-pressuring shallow oil fields. By using wells drilled several years ago production brought back to original flush thru the application of water, air or gas applied to the producing sands thru new openings forcing the oil to flow. Tests prove 75% of possible production still in sands. Have some good leases, old and new, will transfer in exchange for working contract. Write—H. B. Snyder, Box 126, Ottawa, Kansas.

OIL LAND Subdivisions—L. H. Gowdy—Licensed Surveyor and Civil Engineer, 2325 Brentford Road, San Marino, Calif.

NEEDING CASH
½ int. Min. Deed participating 320 A. NE Greeley Co. Kans. in heart Stan. 30,000 A. block. Paying $1 ann. rental, this ½ sec. brought nice bonus when leased. 5 yr. $2½ A, 10 yr. $5 A, 20 yr. $7½ A, perpetual $10 A, clear, perfect title. Also 160 A Same block same price. Aaron Sell Stafford, Kansas.

WILL they find oil in the Forest City Basin? Get the facts about 26 wells drilled this year. Particulars. Box 423, St. Joseph, Missouri.

WILL sell several producing wells in shallow field in North Louisiana. Present daily production about 500 barrels. Purchaser must be financially responsible. Replies confidential. Address Box K-303, The Oil and Gas Journal, Tulsa, Okla.

SEVEN paying wells; shallow Kansas oil; will sell to drill adjoining acreage. Arthur Nickell, Fayette, Missouri.

AN opportunity for you in a new oil field in Arizona. Good drilling proposition. 2320 E. McDowell, Phoenix, Arizona.

Leases and Drilling Blocks

NEW MEXICO WEEKLY OIL SCOUT REPORT.—Send for sample copy. Roy G. Barton, Box 968, Hobbs, N. M.

EAST TEXAS Woodbine—Trinity sand wildcats starting shortly offer best chances big quick money. Leases—Royalties. E. CROFT, PROCTOR, TEXAS.

WILL SELL 1/16th interest in proven shallow gas lease for $55. to finance first well. Write for full details. Drilling Contractor, Box 262, Claremore, Oklahoma.

NEW MEXICO
State Oil and Gas Leases
Buy on known structures where major companies own leases. 50c per acre. 5c rentals. Other leases as low as $6.00 per forty. Write for lists. Twenty years in the business without a complaint.
HARRY S. WRIGHT, STATE LESSEE
Registered Dealer—State of Iowa.
Box 166, Council Bluffs, Iowa
Box 347, Santa Fe, New Mexico.

PARTY thoroughly familiar with legal requirements, geological conditions and developing and operating practices in Eastern Oklahoma Shallow Oil and Gas Fields, desires reliable connection to handle financing number of exceptionally favorable structures and leases in that area, at small cost. References gladly exchanged and fullest investigation solicited. J. L. Haner, 105 McKibban Bldg., Muskogee, Oklahoma.

I Need Cash
UNUSUAL OPPORTUNITY
5 yr. $1.—10 yr. $2.—20 yr. $3.—or perpetual $5. per acre, half royalty Deeds, participating on 18 quarters Western Kansas, 4 north Hamilton, 7 Greeley, 1 Wallace and 6 Wichita Co. 3 quarters now leased Atlantic, near Shallow Water field, others near and adjoining Stanolind large acreage. Land is clear, with perfect titles.
AARON SELL
Stafford, Kansas.

THE OSBORN OIL GROUP, is starting a drilling campaign on proven leases in Illinois, Indiana and Ky. Headed by experienced oil men. Later expect to do some drilling on Gulf Coast, in gusher districts. We sell royalties under wells drilling. This is a deal to get in on. Subscribe to this oil group today. Bank Reference. Box 2152, Wichita, Kansas.

Leases and Drilling Blocks

WANT CAPITAL to invest in perpetual mineral rights in North Permian Basin in Texas and New Mexico in major company blocks on geophysical highs. Rapid development under way now. Will take interest after all monies have been repaid. Address Box J-990, The Oil and Gas Journal, Tulsa, Oklahoma.

FOR SALE Oil and gas leases and small production located in Kentucky shallow field, and leases located in Clay County, Tenn. Have for sale two tracts of proven Fluorspar and Zinc deposits; reports furnished on request. W. P. Harley Bowling Green, Kentucky.

WILL ASSIGN ⅝ interest in proven shallow oil and gas field for financial assistance to drill. Address Box K-305, The Oil and Gas Journal, Tulsa, Okla.

Situations Wanted

Oil and Gasoline Distributing Companies! Corporate real estate, taxation, chain leasing man; specialist property tax assessment reduction; appraisal; successful tax saving record in present position greatly exceeding salary remuneration. Address Box K-262, The Oil and Gas Journal, Tulsa, Oklahoma.

EXECUTIVE or ASSISTANT
Oil well supply, steel fabricating, and oil experience. Broad, practical knowledge of financial, sales, production, legal and administration problems. P. O. Box 134, Pasadena, California.

Help Wanted

WANT YOUNG PETROLEUM ENGINEERS to install Gas-Lift. Must reside in territory they work. Address P. O. Box 2782, Houston, Texas.

MACHINIST: Experienced with pipe machine, lathe, acetylene and electric welding and oil industry equipment. Steady work for steady worker. Box K-301, The Oil and Gas Journal, Tulsa, Oklahoma.

ESTABLISHED steel derrick manufacturer will appoint local, resident representatives for exclusive territories. Mid-Continent area. Straight commission, but a generous contract. Address Box K-304, The Oil and Gas Journal, Tulsa, Okla.

For Sale—Maps

TEXAS and NEW MEXICO
UP-TO-DATE OIL DEVELOPMENT MAPS
Zingery Oil Map Co., Fort Worth, Tex.

R. B. ROBINSON MAPS
Jackson, Miss. 312 Century Bldg.
Ownership maps of Yazoo and forty other Mississippi counties

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission Inquiries invited.

B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo

PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
703 Kennedy Bldg., Tulsa, Okla.

PRODUCING royalty investments wanted. Sebago Oil Co., 719 McBirney Bldg. Tulsa, Oklahoma.

WANT to buy producing oil lease or producing royalty. Will also buy oil payments. Give full details, description, and price. Address Box K-271, The Oil and Gas Journal, Tulsa, Oklahoma.

Mailing Lists

ROYALTY Lists. Oil Investor Lists Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa Oklahoma.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Old Press, 215 East Third St., Tulsa, Okla.

Business Opportunities

MANUFACTURERS REPRESENTATIVE: Experienced, well acquainted salesman desires accounts in Mid-Continent area. Commission or salary. Box K-291, The Oil and Gas Journal, Tulsa, Oklahoma.

PIONEER OIL AND GAS ENGINE builders will consider selling its name, patterns, machinery and equipment, part or all, and inventory at low figure to manufacturer who will continue repair service to customers including U. S. Government. Address Box K-290 The Oil and Gas Journal, Tulsa, Oklahoma.

ABSTRACT PLANT, records up to date, good business, photostat machine, good oil prospects in county.
Box 374
Florence, Alabama.

ESTABLISHED Sales and service supply company desires agency for high class gas engine and diesel engine rings—Also desires account of high class flexible couplings for connecting engines, motors, etc., to driven machines. Sell entire Mid-Continent district. Address Box K-302, The Oil and Gas Journal, Tulsa, Oklahoma.

Survey Service

REMEMBER EAST TEXAS
When all other methods fail, employ my divining or dowsing method. If oil exists this method finds it. Faults, broken, treacherous areas accurately defined. Our Watson #2, first producer Wilmington, Calif. field, located by this method. More reliable than mechanical geophysics. Ask any unbiased oil authority. Many years' experience. A wise man investigates. George Miller, 1648 Post, Torrance, Calif.

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30	7 Lines	$2.45	$4.20	$5.95	$7.70
4 Lines	1.40	2.40	3.40	4.40	8 Lines	2.80	4.80	6.80	8.80
5 Lines	1.75	3.00	4.25	5.50	9 Lines	3.15	5.40	7.65	9.90
6 Lines	2.10	3.60	5.10	6.60	10 Lines	3.50	6.00	8.50	11.00

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes

1 Inch	1 time	$5.00
1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

CLASSIFIED ADVERTISING

For Sale—Equipment **For Sale—Equipment** **For Sale—Equipment**

UNITED REFINERY—RUSSELL, KANS.

3,000 bbl. Skimming Plant Complete—Offered in its Entirety.

We are in the market for large storage tanks.

WIRE—PHONE—WRITE

SONKEN-GALAMBA SUPPLY COMPANY

W. C. Berry or H. J. Galamba,
Riverview at Second, Kansas City, Kansas

Robt. W. Duden,
2100 S. Union, Tulsa, Oklahoma

FOR SALE—122' Emsco Drilling Derrick with substructure. Practically new. S. G. Read, 1st Nat'l Bank Bldg. Henderson, Texas.

FOR SALE—Good second-hand #2 National Drilling Machine with calf wheels, boiler, engine, and other equipment. Now located at Winfield, Kans. Call or write, W. C. Einhaus, New Cambria, Kansas. Phone Salina, Kansas, #93F04.

EMERGENCY NEED?

Freight Cars; any kind
Locomotives; all types
Relaying Rails
Freight Car Repair Parts
Perhaps *we* can supply your requirements, and *immediately?*

OTHER MACHINERY and EQUIPMENT, TOO!

IRON & STEEL PRODUCTS, INC.
13412 S. Brainard Ave., Chicago, Ill.
"Anything containing IRON or STEEL"

F O R S A L E

48' x 160'—16' Walls. hvy. construction Wisconsin Bridge & Iron Steel Building 18 and 22 Ga. Galv. Iron. Located at Maud, Okla. $4,000.00 as stands, erected on present location.

48' x 80'—16' Walls hvy. construction Wisconsin Bridge & Iron Steel Building 18 and 22 Ga. Galv. Iron. Located at Garber, Okla. $2,400.00 as stands erected on present location.

48' x 120'—16' Walls, hvy. construction Wisconsin Bridge & Iron Steel Building. 18 and 22 Ga. Galv. Iron. Located at Okla. City. $3,600.00 as stands, erected on present location.

THE NATIONAL SUPPLY CO.
TULSA, OKLA.

DISTILLATE HEATING STOVES
For steel oil field (doghouses) with lifetime Glebe Burner. Weld to floor, permanent, efficient, economical. $26.50 F.O.B. Rankin. Chas. E. Gelbe, Rankin, Texas.

FOR SALE—Complete pipe line pump station. 3 Miller 70 HP Gas Engines, with new spare parts. 3 Goulds 4-stage line pumps with new spare parts. 1 25-HP F&M Gas Engine, 1 generator and 1 air compressor. Located Jal, New Mexico. For quick sale call Westerly Supply Company. Phone 150, Wink, Texas.

STEAM DRILLING RIG

Unitized 3 speed—2 shaft Oilwell 7" Drawworks.
2—New Lucey 104-HP 300# W. P. boilers.
1—18" Wilson-Snyder Steam pump.
1—12"x12" Gumbo Buster (Johnson) Engine.
1—New Lee C. Moore 122' drilling derrick. Rig complete with blocks, swivel, rotary table, derrick equipment and floor tools. Will sell for cash or credit memorandum from reputable supply company.

W. P. LUSE PETROLEUM CO.
1408 Magnolia Building
Dallas, Texas

FOR SALE

One complete late type drilling rig consisting of: 2 125-H.P. boilers. 5,500 feet of 4" seamless drill pipe. 7" Unitized draw works with all necessary additional parts.

Also a complete stock of line pipe, casing, tubing, drilling machinery and pumping equipment.

Wire, Write, or Phone for prices.

Louisiana Iron & Supply Co.
Shreveport, Louisiana.

FOR SALE
Super "H" Fortworth complete in every respect, with tools from 12" down.
The Veeder Supply & Development Co.
P. O. Box 270
Cherryvale, Kansas

WE OFFER—STEEL DERRICKS
F.O.B. Tulsa, Okla.
Fresh Painted—Subject to Prior Sale

94' x 24' x 5'—6 Derricks 333,000# cap'y.
6x6x½ silicon starting legs
6x6x⅜ silicon running legs
21" 59# W.F. header beams
10,000# cap'y. gin pole
Shipping wt. 18,529#
Each **$680.00**

87' x 20' x 5'—6 Derricks 215,000# cap'y.
5x5x⅜ silicon starting legs
5x5x⅞ silicon running legs
15" 42.9# header beams
10,000# cap'y. gin pole
Shipping wt. 11,229#
Each **$520.00**

87' x 20' x 5'—6 Derricks 165,000# cap'y
Same as above except mild steel
Each **$485.00**

87' x 20' x 5'—6 Derricks 126,000# cap'y
5x5x⅞ mild steel starting legs
5x5x¼ mild steel running legs
15" 47.9# header beams
10,000# gin pole
Shipping wt. 9,829#
Each **$460.00**

74 x '20' x 5'—6 Derricks 88,000# cap'y.
4x4x⅞ mild steel starting legs
4x4x¼ mild steel running legs
12" 31.8# header beams
4,000# cap'y. gin pole
Shipping wt. 6,800#
Each **$340.00**

We are reorganizing and must close out derricks on hand at various points from Illinois to the Gulf Coast. Also some Galv. Derricks for sale at similar reductions.
Our Need Is Your Opportunity

WERTZBERGER DERRICK CO.
P. O. Box 796
Tulsa, Oklahoma

FOR SALE: Reconditioned OCS Single Brake and Grayhound chain driven sand reels. I. T. I. O., Bartlesville, Oklahoma.

For Sale—Equipment

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x8 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
28 West 2nd St. Cincinnati, Ohio.

Equipment Wanted

WILL buy unitized Diesel Rig, including derrick, drill pipe, casing, wire rope, etc., new or nearly so. For small-hole drilling to 7,000 feet, foreign. Send price per unit, total price and price f.o.b., state which U. S. port. Send specifications and if will sell all or part. Address

BOX K-251
The Oil and Gas Journal
Tulsa, Oklahoma.

WANTED one or two Newton Heat Exchangers. Also small stabilizer. P. O. Box 449, Livingston, Texas.

W A N T E D
Air Compressors
Ingersoll-Rand Belt Driven
10 & 4¼ x 10 XOB
11 & 5 x 10 XOB
Box K-300, The Oil and Gas Journal
Tulsa, Oklahoma.

Financing

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan

Addresses Wanted

ANYONE knowing the whereabouts of Hermon Carter, urge him write mother, Mrs. Johnnie Carter, Mt. Hermon, La., who is ill.

Legal Blanks

SINCE 1908 Burkhart's legal forms—servicing Mid-Cont. oil fields, including Ill., La., Mo., Ind. & Ky. Free catalog & samples. Burkhart Ptg. & Sta. Co., 115 So. Cinn., Tulsa, Okla.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Ranches—Farm Land

RANCHES and FARMS
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CROWLEY

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obvious as to proration that it works inequitably against the small owner in a big field. An independent refiner is at a disadvantage when he has no independent source of crude and must obtain it from others. Can an independent refiner get a supply from an independent producer?" "He cannot when the pipe lines stand between them," replied Mr. Crowley.

Congressman Williams took up the subject of equitable withdrawal laws. "They are fallacious and unsound," said Mr. Crowley. "Very few oil pools are in fact common pools. I do not think any living man can estimate how much oil there is underground." "That has been demonstrated by the fact that wells have been brought in in areas where the experts said there was no oil," Senator O'Mahoney declared.

Replying to Hugh M. Cox, of the Department of Justice, that the Transportation Act of 1920 makes pipe lines common carriers, Mr. Crowley said: "We know pipe lines first publish rates and that they become effective if not challenged. If they are challenged a long, bitter contest follows. Small shippers cannot contest because of the money it requires to do so and furthermore because they cannot afford to fight the big company because of the fear of what the big company can do to him."

Concluding, Mr. Crowley asked: "If pipe lines are common carriers why do eight of the major companies own the Great Lakes gasoline pipe line?"

Taking a final fling at the pending oil bill, Attorney Crowley said that if the industry is placed under federal control there will be no development of new fields, no new discoveries because the independents won't be able to afford to come to Washington to obtain or finance the necessary federal permits.

Would Increase Missouri Tax on Gasoline

JEFFERSON CITY, Mo.—A new road program—embodying a 3-cent gasoline tax which sponsors claimed would provide 10 million dollars a year for road improvements—was laid before the state highway commission by a committee headed by Judge E. S. Bond, president of the Missouri County Judges Association.

Three-cent gallon tax proposals—a penny boost—were beaten at the polls last year and again in this year's session of the legislature.

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